



IEI Technology Corp.



# MODEL: **AFOLUX CX Series**

**Fanless All-in-one Panel PC with VIA C7®/Eden™ CPU  
TFT LCD, Wireless LAN, Bluetooth, Touch Screen  
RoSH Compliant, IP 64 Protection**

## **User Manual**

Rev. 1.00 July 2007



# Revision

| MODEL           | AFOLUX CX Series Flat Panel PC User Manual |               |
|-----------------|--------------------------------------------|---------------|
| Revision Number | Description                                | Date of Issue |
| 1.00            | Initial release                            | July 2007     |
|                 |                                            |               |

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# Packing List

**NOTE:**

If any of the components listed in the checklist below are missing, please do not proceed with the installation. Contact the IEI reseller or vendor you purchased the AFOLUX CX series from or contact an IEI sales representative directly. To contact an IEI sales representative, please send an email to [sales@iei.com.tw](mailto:sales@iei.com.tw).

The items listed below should all be included in the AFOLUX CX series package.

- 1 x AFOLUX CX series panel PC
- 1 x Power cord
- 1 x 80W power adapter
- 1 x HDD cable
- 1 x eSATA cable
- 1 x Screw set
- 1 x Touch pen
- 1 x User Manual and driver CD
- 1 x Wall mounting kit (optional)
- 1 x Arm mounting kit (optional)
- 1 x Stand mounting kit (optional)
- 1 x 128MB CompactFlash® card with Windows CE 5.0 pre-installed (optional)
- 1 x 1GB CompactFlash® card with Windows XPE pre-installed (optional)

Images of the above items are shown in **Chapter 3**.



# Precautions

## **SAFETY PRECAUTIONS**

1. Prior to installing, moving, and modifying the panel PC, make sure that the unit's power is turned off and the power cord is disconnected.
2. Do not apply voltage levels that exceed the specified voltage range. Doing so may cause fire or an electrical shock.
3. Electric shock can occur if the panel is opened. Do not drop or insert any objects into the ventilation openings of the panel PC.
4. Only qualified engineers from certified system integrators or VARs are allowed to make necessary functional modifications to the panel PC, e.g., adding a touch screen. IEI offers the customization service on a pre-order basis.
5. If considerable amount of dust, water, or fluids entered the panel PC, turn off the power supply immediately, unplug the power cord, and contact the vendor.
6. Explosions may occur with installations in environments where flammable gases are present.
7. Fault-tolerant and failsafe designs should be implemented with the use of the series models on transportation vehicles, ships, safety/security devices, or medical devices not related to life-support functionalities. Users/integrators should take the responsibility for implementations with adequate levels of reliability and safety.
8. Preventive designs should be implemented so as to avoid the communications faults between the panel PC and the PC/workstation/terminals that controls it.

## **HANDLING PRECAUTIONS**

1. Do not drop the panel PC against a hard surface. Doing so may damage the display.
2. Do not strike or exert excessive force onto the touch panel.
3. Touching the touch panel using a sharp object may damage the LCD panel.
4. Avoid environments exposed to direct sunlight, dust, or chemical vapors.
5. The panel PC is actively cooled. In no circumstances should the panel PC

operate with the openings obstructed by foreign objects. However, the ambient temperature of the installation site should be observed and controlled to avoid overheating the panel PC.

6. Condensation might form inside the panel PC chassis if exposed to sudden changes in temperature.
7. Carefully route the power cord so that people cannot step on it. Do not place anything over the power cord.
8. If the equipment should be left unused for an extended period of time, disconnect it from the power source to avoid damage by transient over-voltage.
9. If any of the following situations arises, get the equipment checked by service personnel:
  - The power cord or plug is damaged.
  - Liquid has penetrated into the equipment.
  - The equipment has been exposed to moisture.
  - The equipment does not work properly, or the user cannot get it to work according to the user manual.
  - The equipment has been dropped and damaged.
  - The equipment shows obvious signs of breakage.

**WARNING!**

Any changes or modifications made to the equipment that are not expressly approved by the relevant standards could void the authority to operate the equipment.

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**MAINTENANCE AND CLEANING**

Note the following precautions before beginning to clean the Panel PC.

When cleaning any single part or component of the computer, please read and understand the details below fully.

- Except for the properly installed front LCD panel, never spray or squirt liquids directly onto any computer component. To clean the device, please rub it with

## AFOLUX CX Series Flat Panel PC

a piece of dry and soft cloth or a slightly moistened cloth with the exterior casing.

- The interior of the Panel PC does not require cleaning. Keep fluids away from the Panel PC and the interior of it.
- Be cautious of the tiny removable components when using a vacuum cleaner to absorb the dirt on the floor.
- Turn the system off before cleaning up the Panel PC.
- Never drop any tiny objects through the openings of the Panel PC or get circuit board damp or wet.
- Be cautious of all kinds of cleaning solvents or chemicals when using it for the sake of cleaning. Some individuals may be allergic to the ingredients.
- Avoid any food, drink or cigarette around the Panel PC.

### CLEANING TOOLS

Although many companies have created products to help improve the process of cleaning the computer and peripherals, users can also use household items to clean their computers and peripherals. Below is a list of items to use while cleaning the computer or computer peripherals.

Please keep in mind that some components in the computer may only be cleaned using a product designed for cleaning that component, if this is the case it will be mentioned in the cleaning tips.

- **Cloth** - A piece of cloth is the best tool to use when rubbing up a component. Although paper towels or tissues can be used on most hardware as well, it is recommended to rub it with a piece of cloth.
- **Water or rubbing alcohol** – Moisten a piece of cloth a bit with some water or rubbing alcohol and rub it on the computer.
- Unknown solvents may be harmful to the plastics parts.
- **Vacuum cleaner** - Absorb the dust, dirt, hair, cigarette particles, and other particles out of a computer can be one of the best methods of cleaning a computer. Over time these items can restrict the airflow in a computer and cause circuitry to corrode.
- **Cotton swabs** - Cotton swabs moistened with rubbing alcohol or water are

excellent tools for wiping hard to reach areas in the keyboard, mouse, and other locations.

- **Foam swabs** - Whenever possible it is better to use lint free swabs such as foam swabs.

## ESD PRECAUTIONS

Observe all conventional anti-ESD methods while handling the components contained within the LCD should the need arise for adding a functionality. The use of a grounded wrist strap and an anti-static work pad is recommended. Avoid dust and debris or other static-accumulating materials in the work area.



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Chapter

1

# Introduction

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## 1.1 AFOLUX CX Series Flat Panel PC Overview

The AFOLUX CX series flat panel PC is a flexible, multi-functional flat panel PC that can be applied in diverse operational environments and implemented in multi-faceted applications. The AFOLUX CX series comes fully kitted with a high-performance motherboard and a host of other peripheral interface connectors. The integrated wireless LAN module and Bluetooth module ensure an uninterrupted wireless connection. The AFOLUX CX series is designed for ease of use and easy installation.

### 1.1.1 Model Variations

The models of AFOLUX CX series are listed in **Table 1-1**.

| <b>AFL-15A-CX</b> | <b>CPU</b>            | <b>LCD</b> | <b>Memory</b> | <b>Wireless LAN</b> | <b>Touch screen</b> |
|-------------------|-----------------------|------------|---------------|---------------------|---------------------|
| -15GZ/WT-R/512MB  | VIA C7 <sup>®</sup>   | 15"        | 512MB DDR2    | Yes                 | Yes                 |
| -05GZ/WT-R/512MB  | VIA Eden <sup>™</sup> | 15"        | 512MB DDR2    | Yes                 | Yes                 |
| <b>AFL-17A-CX</b> | <b>CPU</b>            | <b>LCD</b> | <b>Memory</b> | <b>Wireless LAN</b> | <b>Touch screen</b> |
| -15GZ/WT-R/512MB  | VIA C7 <sup>®</sup>   | 17"        | 512MB DDR2    | Yes                 | Yes                 |
| -05GZ/WT-R/512MB  | VIA Eden <sup>™</sup> | 17"        | 512MB DDR2    | Yes                 | Yes                 |
| <b>AFL-19A-CX</b> | <b>CPU</b>            | <b>LCD</b> | <b>Memory</b> | <b>Wireless LAN</b> | <b>Touch screen</b> |
| -15GZ/WT-R/512MB  | VIA C7 <sup>®</sup>   | 19"        | 512MB DDR2    | Yes                 | Yes                 |
| -05GZ/WT-R/512MB  | VIA Eden <sup>™</sup> | 19"        | 512MB DDR2    | Yes                 | Yes                 |

**Table 1-1: Model Variations**

### 1.1.2 Applications

The AFOLUX CX series all-in-one panel PC is designed for multiple applications. Its durability and strength makes it an ideal choice for public access computers. Some possible applications include:

- Vehicle Interior device
  - Truck PC
  - Logistic car PC
- General computing

## AFOLUX CX Series Flat Panel PC

- PC based testing center
  - Distance learning
- Industrial applications
  - Plant environment monitoring system
  - Factory automation platform
  - Manufacturing shop flow
  - Equipment and device control
- Home and building automation
  - Digital surveillance system
  - E-home platform
  - Home IA control terminal
- Self-Service Kiosk
  - Receptionist kiosk in hotel and business premises
  - Self registration terminal in hospital and airport
  - Ticket vending machine for transportation use

### 1.1.3 Standard Features

Some of the standard features of the AFOLUX CX series flat panel PC include:

- VIA C7<sup>®</sup> 1.5GHz processor/VIA Eden<sup>™</sup> 500MHz processor
- Rugged mechanism design with ABS/PC case
- IP 64 dustproof and waterproof front panel
- One 512MB DDR2 memory module pre-installed
- Wireless LAN module and Bluetooth module integrated
- Dual GbE LAN support
- One CompactFlash<sup>®</sup> Type II socket support
- Optional GPRS module
- Simplified installation process
- RoHS compliance

## 1.2 External Overview

### 1.2.1 General Description

The AFOLUX CX series is a stylish flat panel PC that comprises of a screen, rear panel, and bottom panel. An ABS/PC plastic front frame surrounds the front screen. The rear panel provides screw holes for a wall-mounting bracket compliant with VESA FDMI standard. The bottom panel provides access to external interface connectors that include LAN, VGA, USB 2.0 ports, serial ports, reset button, power connector and power switch.

### 1.2.2 Front Panel

The front side of the AFOLUX CX series is a flat panel TFT LCD screen surrounded by an ABS/PC plastic frame.

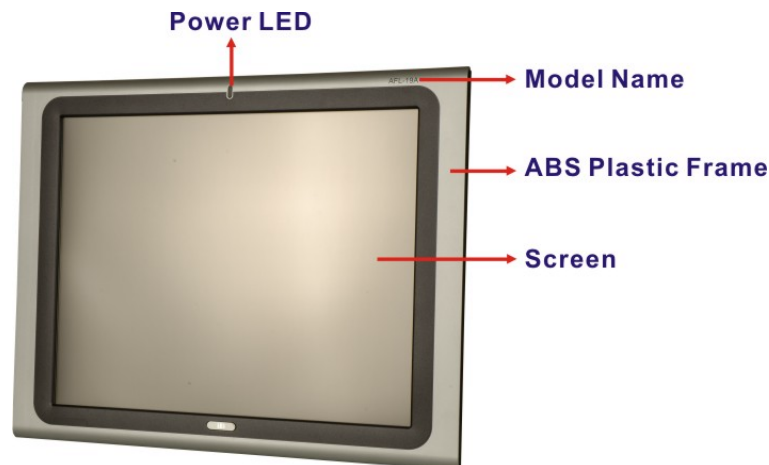


Figure 1-1: Front View

### 1.2.3 Rear Panel

The rear panel provides access to retention screw holes that support the wall mounting. Refer to **Figure 1-2**.



## AFOLUX CX Series Flat Panel PC



Figure 1-2: AFL CX Series Rear View

### 1.2.4 Bottom Panel

The bottom panel of the AFOLUX CX series has the following I/O interfaces (**Figure 1-3**):

- 4 x USB 2.0 connectors
- 1 x AC power adapter connector
- 1 x Power switch
- 1 x RS-232 serial port connector
- 1 x RS-232/422/485 serial port connector
- 2 x RJ-45 GbE connectors
- 1 x Reset button
- 1 x VGA connector (AFL-17A-CX/AFL-19A-CX only)

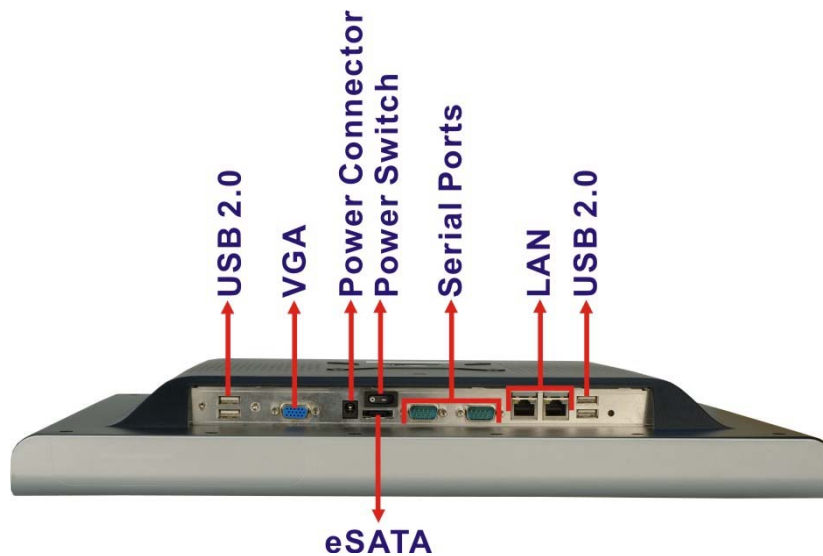


Figure 1-3: AFOLUX CX Series Bottom View

### 1.3 Internal Overview

The AFOLUX CX series internal components are protected in an aluminum chassis inside the plastic back cover. The motherboard, wireless LAN module, Bluetooth module and DDR2 memory module are installed on a metal sheet that protects the rear of the TFT LCD screen (**Figure 1-4**). Below the metal sheet is a circuit board that is connected to the screen and the motherboard.

## AFOLUX CX Series Flat Panel PC

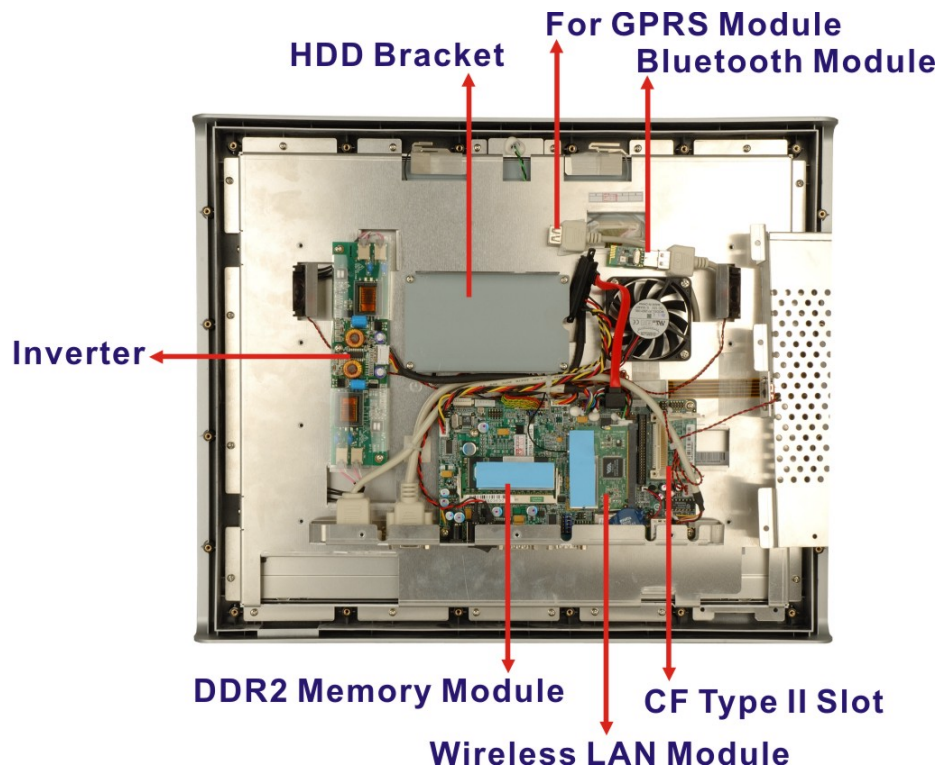


Figure 1-4: AFOLUX CX Series Internal Overview

## 1.4 Specifications

### 1.4.1 Preinstalled Hardware Components

The AFOLUX CX series flat panel PC has the following preinstalled components:

- 1 x Motherboard
- 1 x TFT LCD screen
- 1 x Touch screen
- 1 x Inverter
- 1 x Wireless LAN module
- 1 x Bluetooth module
- 1 x DDR2 memory module

The technical specifications for some of these components and the system are shown in the sections below.

### 1.4.2 System Specifications

The technical specifications for the AFOLUX CX series systems are listed in **Table 1-2**.

| SPECIFICATION        | AFL-15A-CX                                                                                     | AFL-17A-CX            | AFL-19A-CX            |
|----------------------|------------------------------------------------------------------------------------------------|-----------------------|-----------------------|
| Front Panel          | ABS/PC plastic front panel                                                                     |                       |                       |
| Chassis              | Aluminum chassis                                                                               |                       |                       |
| LCD Panel            | 15"                                                                                            | 17"                   | 19"                   |
| Resolution           | 1024 x 768                                                                                     | 1280 x 1024           | 1280 x 1024           |
| Brightness           | 350 cd/m <sup>2</sup>                                                                          | 300 cd/m <sup>2</sup> | 300 cd/m <sup>2</sup> |
| Contrast Ratio       | 400:1                                                                                          | 800:1                 | 800:1                 |
| Viewing Angle (H-V)  | 120/100                                                                                        | 160/160               | 160/160               |
| Backlight MTBF       | 50000                                                                                          | 50000                 | 50000                 |
| Touch Screen         | 5-wire resistive type (touch controller IC is on-board)                                        |                       |                       |
| SSD                  | CompactFlash <sup>®</sup> Type II                                                              |                       |                       |
| Audio                | AMP 1.5W + AMP 1.5W (internal speaker)                                                         |                       |                       |
| Extension            | 1 x Mini PCI (for wireless LAN module)<br>1 x Bluetooth module (USB interface, Bluetooth v2.0) |                       |                       |
| Anti-shock Drive Bay | 1 x 2.5" HDD bay                                                                               | 1 x 2.5" HDD bay      |                       |
| GPRS Module          | or<br>optional GPRS Module                                                                     | Optional              |                       |



## AFOLUX CX Series Flat Panel PC

| SPECIFICATION                 | AFL-15A-CX                                                                                                                                                                                                                                              | AFL-17A-CX     | AFL-19A-CX     |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|
| <b>I/O</b>                    | 4 x USB 2.0 port<br>1 x Power switch<br>1 x eSATA port<br>1 x RS-232 serial port<br>1 x RS-232/422/485 serial port<br>2 x Gigabit Ethernet ports<br>1 x Reset button<br>1 x VGA port (AFL-17A-CX/AFL-19A-CX only)<br>1 x AT/ATX power switch (internal) |                |                |
| <b>Power</b>                  | 12V, 80W DC power adapter                                                                                                                                                                                                                               |                |                |
| <b>Power Consumption</b>      | 52W                                                                                                                                                                                                                                                     | 61W            | 61W            |
| <b>Mounting Feature</b>       | Wall, Arm, Stand                                                                                                                                                                                                                                        |                |                |
| <b>Operating Temperature</b>  | 0°C ~40°C                                                                                                                                                                                                                                               |                |                |
| <b>Storage Temperature</b>    | -20°C ~60°C                                                                                                                                                                                                                                             |                |                |
| <b>Relative Humidity</b>      | 10% ~ 80% RH, non-condensing                                                                                                                                                                                                                            |                |                |
| <b>Vibration</b>              | 5 - 17Hz, 0.1" double amplitude displacement.<br>17 - 640Hz, 1.5G acceleration, peak to peak.                                                                                                                                                           |                |                |
| <b>Shock</b>                  | 10G Acceleration, peak to peak (11ms)                                                                                                                                                                                                                   |                |                |
| <b>Dimension (W x H x D)</b>  | 394 x 309 x 61                                                                                                                                                                                                                                          | 428 x 350 x 65 | 470 x 383 x 67 |
| <b>Net/Gross Weight</b>       | 3.2Kg                                                                                                                                                                                                                                                   | 5Kg            | 5.6Kg          |
| <b>Front Panel Protection</b> | IP 64 compliant                                                                                                                                                                                                                                         |                |                |
| <b>Safety &amp; EMI</b>       | CE / FCC / EMC / CB                                                                                                                                                                                                                                     |                |                |

Table 1-2: AFOLUX CX Series System Specifications

### 1.4.3 Motherboard Specifications

The AFOLUX CX series come with an AFLMB-CX700 motherboard. The technical specifications of the motherboard are listed in **Table 1-3**.

| Specification                  | AFLMB-CX700                                                                                                                                            |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>CPU</b>                     | VIA C7 <sup>®</sup> / VIA Eden <sup>™</sup>                                                                                                            |
| <b>Chipset</b>                 | VIA CX-700M                                                                                                                                            |
| <b>Display</b>                 | CRT integrated in VIA CX-700M<br>Supports panel resolution from VGA to UXGA (1600 x 1200)<br>Supports one Dual-Channel / two Single-Channel LVDS panel |
| <b>Memory</b>                  | Supports one DDR2 400/533 200-pin SO-DIMM SDRAM module up to 1GB                                                                                       |
| <b>Extension</b>               | One mini PCI slot                                                                                                                                      |
| <b>BIOS</b>                    | Award BIOS                                                                                                                                             |
| <b>SSD</b>                     | CFII                                                                                                                                                   |
| <b>Super I/O</b>               | N/A for legacy free                                                                                                                                    |
| <b>Audio</b>                   | VT1708 (High Definition Audio)                                                                                                                         |
| <b>LAN</b>                     | 10/100/1000 Base-T dual RTL8110SC                                                                                                                      |
| <b>COM</b>                     | Two RS-232 serial ports                                                                                                                                |
| <b>IDE</b>                     | One 44-pin IDE connects to two IDE devices                                                                                                             |
| <b>Touch Screen Controller</b> | DMC9000                                                                                                                                                |
| <b>Power Supply</b>            | 12V ATX power support                                                                                                                                  |
| <b>Dimensions</b>              | 102mm x 186mm                                                                                                                                          |

**Table 1-3: Motherboard Specifications**

## AFOLUX CX Series Flat Panel PC

### 1.4.4 Flat Panel Screen Specifications

The AFOLUX CX series come with a TFT LCD monitor at the front of the flat panel PC (see **Figure 1-1**). The specifications for the LCD monitor are shown in **Table 1-4** below.

| SPECIFICATION                        | AFL-15A-CX           | AFL-17A-CX           | AFL-19A-CX          |
|--------------------------------------|----------------------|----------------------|---------------------|
| <b>Model</b>                         | AUO-G150XG01         | AUO-M170EG01 VD      | AUO-M190EG02 V4     |
| <b>Size</b>                          | 15"                  | 17"                  | 19"                 |
| <b>Resolution</b>                    | 1024 x 768 (XGA)     | 1280 x 1024 (SXGA)   | 1280 x 1024 (SXGA)  |
| <b>Active Area (mm)</b>              | 304.128 x 228.096    | 337.920 x 270.336    | 376.32 x 301.06     |
| <b>Pixel Pitch (mm)</b>              | 0.297 x 0.297        | 0.264 x 0.264        | 0.294 x 0.294       |
| <b>LCD Color</b>                     | Native 262K colors   | Native 16.7M colors  | Native 16.7M colors |
| <b>View Angel (H/V)</b>              | 120/100              | 160/160              | 160/160             |
| <b>Brightness (cd/m<sup>2</sup>)</b> | 350                  | 300                  | 300                 |
| <b>Contrast Ratio</b>                | 400:1                | 800:1                | 800:1               |
| <b>Response Time (ms)</b>            | 16 (Tr + Tf)         | 5 (Tr + Tf)          | 5 (Tr + Tf)         |
| <b>Power Consumption (W)</b>         | 11.5                 | 25.8                 | 24.71               |
| <b>Input Voltage (V)</b>             | 3.3                  | 5.0                  | 5.0                 |
| <b>Backlight</b>                     | 2 CCFL               | 2 CCFL               | 2 CCFL              |
| <b>Electrical Interface</b>          | 1ch LVDS             | 2ch LVDS             | 2ch LVDS            |
| <b>Backlight MTBF (hrs.)</b>         | 50000                | 50000                | 50000               |
| <b>Outline Dimensions (mm)</b>       | 326.5 x 253.5 x 12.0 | 358.5 x 296.5 x 15.8 | 396 x 324 x 16.3    |

**Table 1-4: TFT LCD Monitor Specifications**

### 1.4.5 Touch Screen Specifications

The AFOLUX CX series come with an analog resistive type touch panel. **Table 1-5** lists the touch panel specifications.

| SPECIFICATION         | AFL-15A-CX                        | AFL-17A-CX           | AFL-19A-CX          |
|-----------------------|-----------------------------------|----------------------|---------------------|
| Model                 | PANJIT 1150508B                   | PANJIT 1171505A      | PANJIT 1190503A     |
| Type                  | Analog Resistive Type Touch Panel |                      |                     |
| Wire Type             | 5-wire                            |                      |                     |
| Viewing Area (mm)     | 232.1 x 308.2                     | 342.05 x 275.45      | 306.05 x 381.30     |
| Active Area (mm)      | 228.1 x 304.1                     | 339.0 x 272.4        | 301.05 x 376.30     |
| Total Transmission    | 78%                               |                      |                     |
| Maximum Voltage       | DC7V                              |                      |                     |
| Connector Type        | FPC.                              |                      |                     |
| Operating Temperature | -10°C ~ 40°C                      | -10°C ~ 40°C         | -10°C ~ 40°C        |
| Operating Humidity    | 20% ~ 90% RH                      |                      |                     |
| Storage Temperature   | -20°C ~ 70°C                      |                      |                     |
| Storage Humidity      | 20% ~ 90% RH                      |                      |                     |
| Dimensions            | 257.5 x 333.6 x 2.9               | 365.0 x 295.08 x 2.9 | 330.0 x 404.6 x 2.8 |

**Table 1-5: Touch Panel Specifications**

## 1.4.6 Bluetooth Module Specifications

The AFOLUX CX series come with a Bluetooth module. The technical specifications of the Bluetooth module are listed in **Table 1-6**.

| Specification      | Bluetooth Module                                               |
|--------------------|----------------------------------------------------------------|
| Standard           | Bluetooth v2.0                                                 |
| Frequency Band     | 2.402GHz~2.480GHz unlicensed ISM band                          |
| Modulation Method  | GFSK for 1Mbps<br>$\pi/4$ -DQPSK for 2Mbps<br>8-DPSK for 3Mbps |
| Spread Spectrum    | FHSS (Frequency Hopping Spread Spectrum)                       |
| RF Output Power    | Class 2 (under 4dBm)                                           |
| Antenna Terminal   | 50 Ohms                                                        |
| DC Power           | DC 3.3V or DC 5V                                               |
| I/O Interface      | USB 2.0 interface                                              |
| Two GPIO Interface | LED link indicator interface                                   |
| Dimensions         | 35mm x 11mm                                                    |
| Operating System   | Windows XP, Windows 2000, Windows 98SE, Windows Me             |

**Table 1-6: Bluetooth Module Specifications**



### 1.4.7 Optional GPRS Module Specifications

The GPRS module is one of the OEM options for the AFOLUX CX series. The technical specifications of the GPRS module are listed in **Table 1-7**.

| Specification                      | GPRS Module                                                                            |
|------------------------------------|----------------------------------------------------------------------------------------|
| <b>EDG/GPRS/GSM Air Interface</b>  | Quad-band operation GSM850, EGSM 900, DCS 1800, PCS 1900                               |
|                                    | GSM Power Class 4 (2W) for 850/900 bands<br>GSM Power Class 1 (1W) for 1800/1900 bands |
|                                    | EDFE class E2 (+27dBm in 850/900 bands, +26dBm in 1800/1900 bands)                     |
|                                    | GSM/GPRS Rel '97; PCS 1900 Rel '98; EGPRS Rel '99 compliant                            |
| <b>EGPRS/GPRS (PS) Feature Set</b> | GPRS Class 10, coding schemes 1-4                                                      |
|                                    | EDGE Class 10, Multi-slot classes 1-9                                                  |
|                                    | GPRS/EGPRS Class B type 1 MT                                                           |
|                                    | Link Adaptation                                                                        |
|                                    | Incremental redundancy (IR)                                                            |
| <b>USB Interface</b>               | USB 2.0 +5VDC                                                                          |
| <b>SIM Card Interface</b>          | 3.0V interface                                                                         |
| <b>Temperature</b>                 | -30°C ~ +65°C                                                                          |
| <b>Humidity</b>                    | Up to 95%, non-condensing                                                              |
| <b>Dimensions</b>                  | 109.3mm x 42.7mm x 17.7mm                                                              |
| <b>Operating System</b>            | Windows 2000/XP Home/XP Professional                                                   |

**Table 1-7: GPRS Module Specifications**

## AFOLUX CX Series Flat Panel PC

### 1.5 Dimensions

#### 1.5.1 AFL-15A-CX Dimensions

The dimensions of the AFL-15A-CX flat panel PC are shown in **Figure 1-5** below.

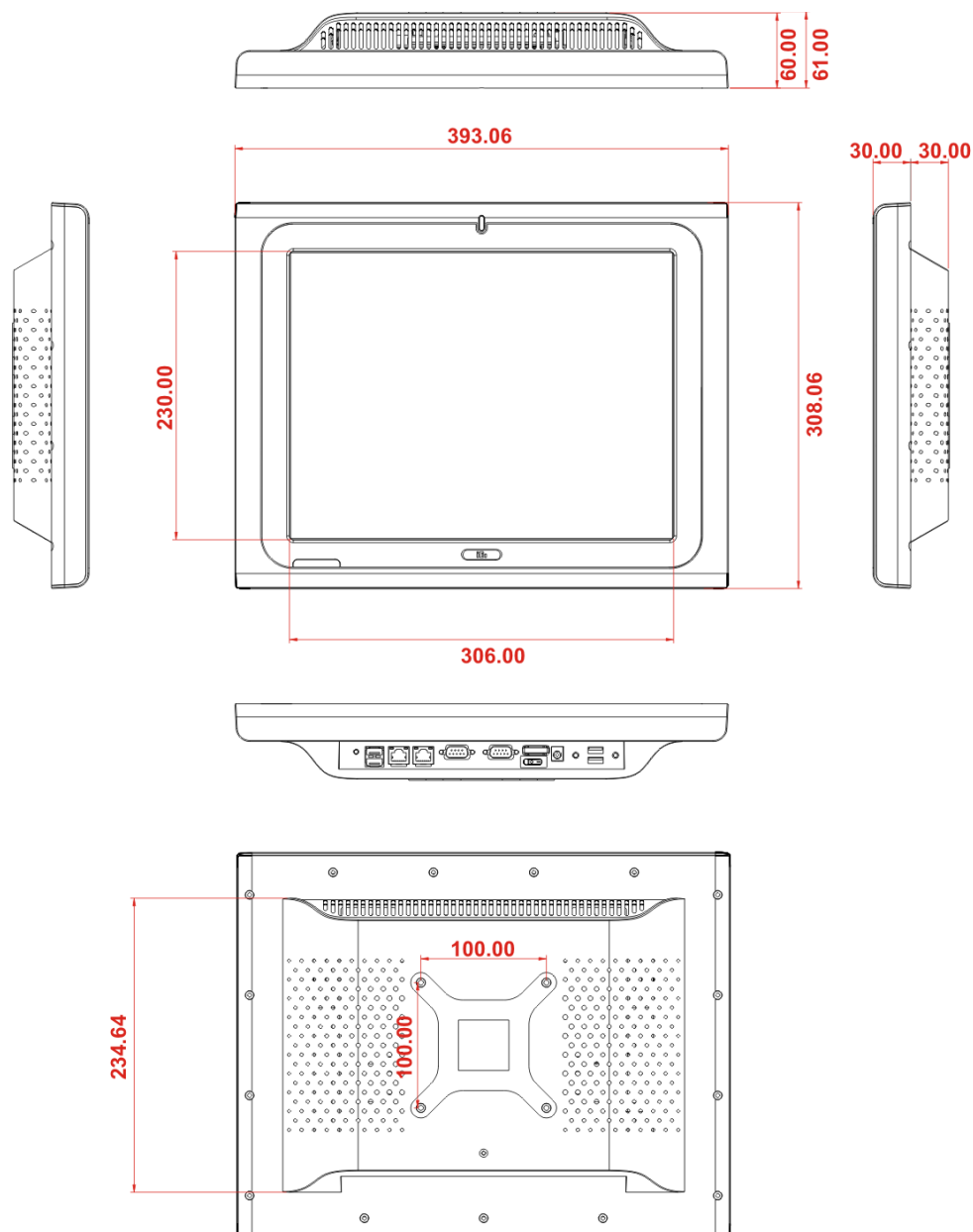


Figure 1-5: AFL-15A-CX Dimensions (units in mm)

### 1.5.2 AFL-17A-CX Dimensions

The dimensions of the AFL-17A-CX flat panel PC are shown in **Figure 1-6** below.

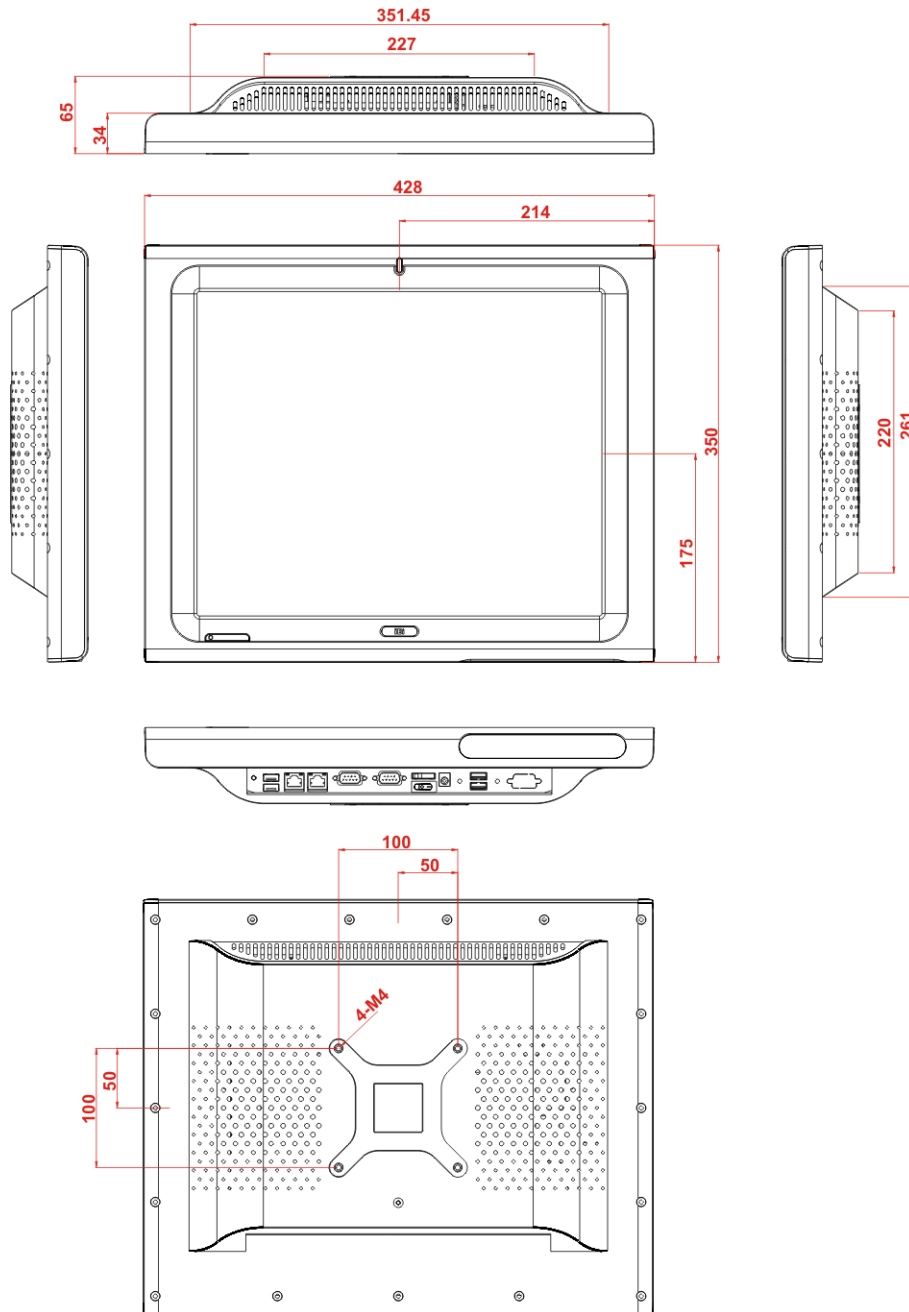
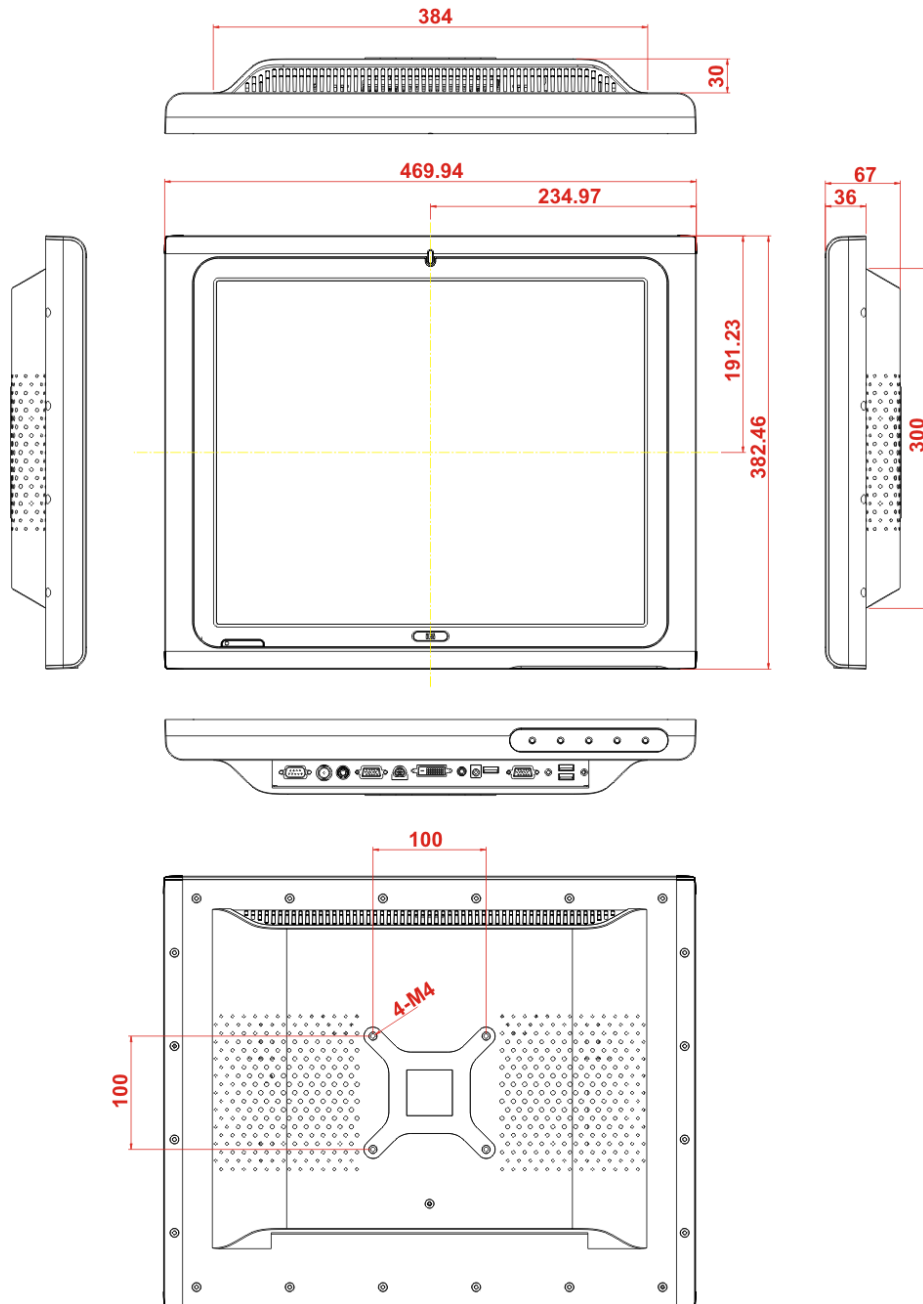


Figure 1-6: AFL-17A-CX Dimensions (units in mm)

## AFOLUX CX Series Flat Panel PC

### 1.5.3 AFL-19A-CX Dimensions

The dimensions of the AFL-19A-CX flat panel PC are shown in **Figure 1-7** below.



**Figure 1-7: AFL-19A-CX Dimensions (units in mm)**



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Chapter

2

# Motherboard

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## 2.1 Introduction

The AFOLUX CX series flat screen PC contains the AFLMB-CX700 motherboard. The motherboard is the heart of any computer and is responsible for transmitting, receiving and processing data as well as driving the different onboard devices. This chapter gives a brief introduction to the AFLMB-CX700 motherboard.

## 2.2 CPU Support

The AFLMB-CX700 motherboard comes with a preinstalled VIA C7® or VIA Eden™ CPU.

### 2.2.1 VIA C7® Specifications

The specifications for the VIA C7® and VIA Eden™ processor are listed below

- CPU clock speeds up to 2.0GHz
- Full x86 Operating System and software application compatibility
- VIA V4 Bus up to 800MHz FSB
- 16 pipeline stages
- Efficiency enhanced 128KB full-speed exclusive L2 cache with 32-way associativity
- Sophisticated branch prediction mechanism
- MMX, SSE, SSE2 & SSE3 instruction sets
- Full-speed FPU
- IO/APIC support
- 90nm SOI (Silicon-on-Insulator) process technology
- x86 processor die (30mm<sup>2</sup>)
- Compact VIA nanoBGA2 package (21mm x 21mm)
- AES Encryption
- Secure Hash SHA-1 and SHA-256
- Two Quantum-based Random Number Generators
- NX Execute Protection

## AFOLUX CX Series Flat Panel PC

### 2.3 System Chipset

The AFLMB-CX700 motherboard has a preinstalled VIA CX-700M system chipset. The system chipset features are listed below.

- 533MB/sec Front Side Bus
- Supports up to 4GB DDR2 533/400MHz or DDR400/333/266MHz SDRAM
- Integrated VIA UniChrome Pro Graphics
- Chromotion™ video engine
- MPEG-2 Decoder
- Video De-blocking
- Adaptive De-Interlace
- DuoView+™
- Optimized Unified memory Architecture (UMA)
- 200MHz Graphics Engine Clock with separated 128-bit data paths
- 128-bit 2D and 3D Graphics engine
- Multi-configuration LVDS/DVI transmitter
- Support for VIA Vinyl HD Audio
- Serial ATA support for up to 2 devices
- Parallel ATA133/100/66 support for up to 2 devices
- Support for up to 6 USB 2.0 ports

### 2.4 Graphics Support

The VIA CX700M utilizes the VIA UniChrome™ Pro Integrated Graphics Processor (IGP) ensuring optimal performance for all multimedia, entertainment, and productivity applications. The graphics processor features are listed below.

- With a 200MHz 2D/3D graphics engine
- 128-bit data paths for pixel data flow
- Texture/command access
- Chromotion™ video engine raises the bar for digital entertainment support
- MPEG-2, MPEG-4 and WMV9 decoding integrated
- Flawless digital video playback with ultra-low CPU-utilization
- Adaptive De-Interlacing and Video Deblocking advanced rendering tools
- Ensure clearer playback of digital content on all display devices

## 2.5 Ethernet Controller Specifications

### 2.5.1 Overview

A highly integrated and cost-effective single-chip, fast RealTek RTL8110SC GbE Ethernet controller is interfaced through first the PCI bus to the CPU and system chipset. The RealTek RTL8110SC controller provides 10Mbps, 100Mbps or 1000Mbps Ethernet connectivity to the AFLMB-CX700.

### 2.5.2 Features

- Integrated 10/100/1000 transceiver
- Auto-Negotiation with Next Page capability
- Supports PCI rev.2.3, 32-bit, 33/66MHz
- Supports CLKRUNB and MiniPCI v1.0
- Supports pair swap/polarity/skew correction
- Crossover Detection & Auto-Correction
- Wake-on-LAN and remote wake-up support
- Microsoft® NDIS5 Checksum Offload (IP, TCP, UDP) and largesend offload support
- Supports Full Duplex flow control (IEEE 802.3x)
- Fully compliant with IEEE 802.3, IEEE 802.3u, IEEE 802.3ab
- Supports IEEE 802.1P Layer 2 Priority Encoding
- Supports IEEE 802.1Q VLAN tagging
- Serial EEPROM
- 3.3V signaling, 5V PCI I/O tolerant
- Transmit/Receive FIFO (8K/64K) support
- Supports power down/link down power saving
- Supports PCI Message Signaled Interrupt (MSI)

## 2.6 Peripheral Device Interfaces, Connectors, and Slots

The peripheral device connectors, interfaces and slots on the AFLMB-CX700 motherboard are listed in the sections below.

### 2.6.1 OEM Options

Many of the peripheral device connectors listed below are not connected to any devices. These connectors are reserved for OEM customizations. For a customized option, please contact the vendor, reseller or IEI sales representative.

### 2.6.2 Internal Slots

The slots listed below can all be found on the AFLMB-CX700 motherboard.

- 1 x 200-pin DDR2 SO-DIMM socket
- 1 x CF Type II slot
- 1 x Mini PCI slot (for wireless LAN module)

### 2.6.3 Internal Peripheral Device Connectors

The peripheral device connectors listed below are located on the AFLMB-CX700 motherboard and used for the AFOLUX series. **Figure 2-1** shows the overview of the connectors that are used for the AFOLUX series.

- 1 x Audio connector
- 1 x Inverter connector
- 1 x LCD interface connector
- 1 x LED connector
- 1 x Power switch connector
- 1 x Touch screen connector



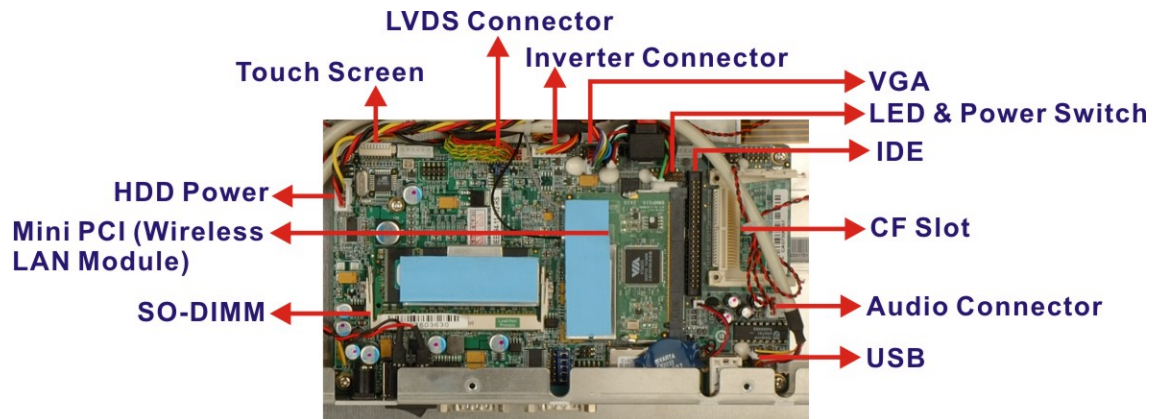


Figure 2-1: AFLMB-CX700 Connector Overview

## 2.6.4 External Peripheral Device Connectors

The peripheral device connectors listed below are located on the rear panel of the AFLMB-CX700 motherboard.

- 2 x Ethernet connectors
- 2 x USB connectors
- 2 x Serial port connectors
- 1 x eSATA connector
- 1 x Reset button
- 1 x Power connector

Chapter

3

# Installation

---

### 3.1 Installation Precautions

When installing the flat panel PC, please follow the precautions listed below:

- **Power turned off:** When installing the flat panel PC, make sure the power is off. Failing to turn off the power may cause severe injury to the body and/or damage to the system.
- **Certified Engineers:** Only certified engineers should install and modify onboard functionalities.
- **Mounting:** The flat panel PC is a heavy device. When mounting the system onto a rack, panel, wall or arm please make sure that at least two people are assisting with the procedure.
- **Anti-static Discharge:** If a user open the rear panel of the flat panel PC, to configure the jumpers or plug in added peripheral devices, ground themselves first and wear an anti-static wristband.

### 3.2 Preinstalled Components

The following components are all preinstalled.

- Motherboard
- TFT LCD screen
- 512MB DDR2 memory module
- Resistive type touch screen
- Wireless LAN module
- Bluetooth module
- Power switch

Preinstalled OEM customizations may include the following.

- Different DDR2 memory module
- Hard disk drive
- GPRS module

Installation of some of the components are described in **the following sections**.

## AFOLUX CX Series Flat Panel PC

### 3.3 Installation and Configuration Steps

The following installation steps must be followed.

- Step 1:** Unpack the flat panel PC
- Step 2:** Install CF card
- Step 3:** Install HDD
- Step 4:** Mount the flat panel PC
- Step 5:** Connect peripheral devices to the bottom panel of the flat panel PC
- Step 6:** Configure the system

### 3.4 Unpacking

To unpack the flat panel PC, follow the steps below:



#### **WARNING!**

The front side LCD screen has a protective plastic cover stuck to the screen. Only remove the plastic cover after the flat panel PC has been properly installed. This ensures the screen is protected during the installation process.

---

- Step 1:** Use box cutters, a knife or a sharp pair of scissors that seals the top side of the external (second) box.
- Step 2:** Open the external (second) box.
- Step 3:** Use box cutters, a knife or a sharp pair of scissors that seals the top side of the internal (first) box.
- Step 4:** Lift the monitor out of the boxes.
- Step 5:** Remove both polystyrene ends, one from each side.

**Step 6:** Pull the plastic cover off the flat panel PC.

**Step 7:** Make sure all the components listed in the packing list are present.





### 3.4.1 Packing List

The AFOLUX CX flat panel PC is shipped with the following components:

| Quantity        | Item                                               | Image                                                                                |
|-----------------|----------------------------------------------------|--------------------------------------------------------------------------------------|
| <b>Standard</b> |                                                    |                                                                                      |
| 1               | AFL-15A/17A/19A-CX panel PC                        |    |
| 1               | 80W power adapter<br>(P/N: 63000-FSP0361AD101C-RS) |   |
| 1               | Power cord                                         |  |
| 1               | HDD cable<br>(P/N:32200-766100-RS)                 |  |
| 1               | eSATA cable                                        |  |
| 1               | User manual CD and driver CD                       |  |
| 1               | Screw set                                          |  |



## AFOLUX CX Series Flat Panel PC

|                 |                                                                    |                                                                                      |
|-----------------|--------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| 1               | Touch pen                                                          |    |
| <b>Optional</b> |                                                                    |                                                                                      |
| 1               | Wall mounting kit                                                  |    |
| 1               | Stand mounting kit (STAND-A19)                                     |    |
| 1               | Stand mounting kit (STAND-B19)                                     |   |
| 1               | 128MB CompactFlash® card with Windows CE 5.0 pre-installed and SDK |  |
| 1               | 1GB CompactFlash® card with Windows XPE pre-installed              |  |

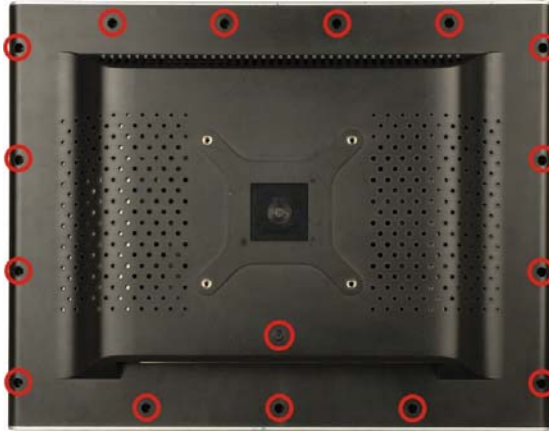
If any of these items are missing or damaged, contact the distributor or sales representative immediately.

### 3.5 CF Card Installation

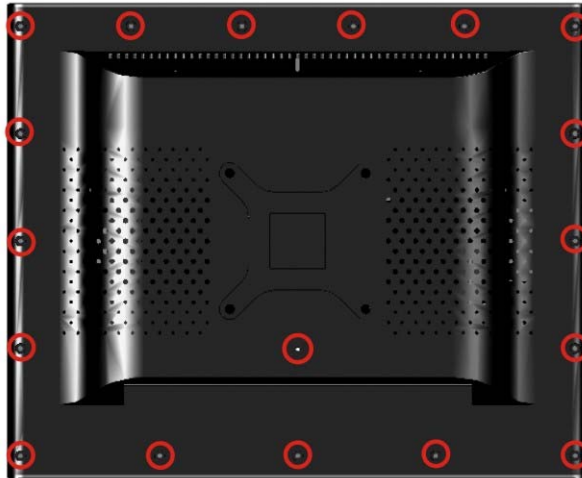
The AFOLUX CX series has one CF Type II slot inside the rear panel. To install the CF card, follow the instructions below.

**Step 1:** Remove the retention screws (**Figure 3-1**, **Figure 3-2** and **Figure 3-3**) and lift

the plastic cover off the flat panel PC.



**Figure 3-1: AFL-15A-CX Back Cover Retention Screws**



**Figure 3-2: AFL-17A-CX Back Cover Retention Screws**

## AFOLUX CX Series Flat Panel PC



Figure 3-3: AFL-19A-CX Back Cover Retention Screws

**Step 2:** Locate the CF slot. Insert a CF card into the slot (Figure 3-4).

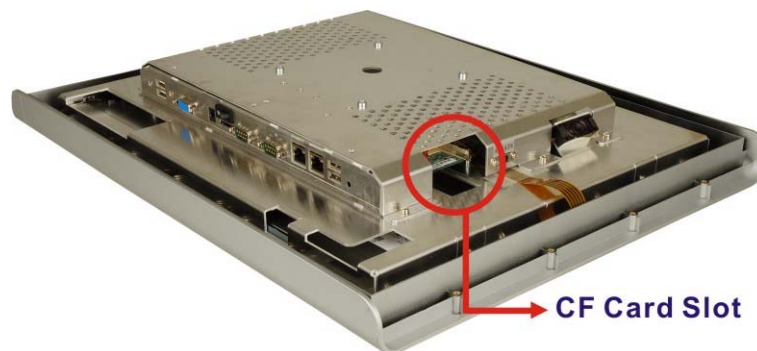


Figure 3-4: CF Card Location

**Step 3:** Replace the plastic back cover. Once replaced reinsert the twenty-one previously removed retention screws.

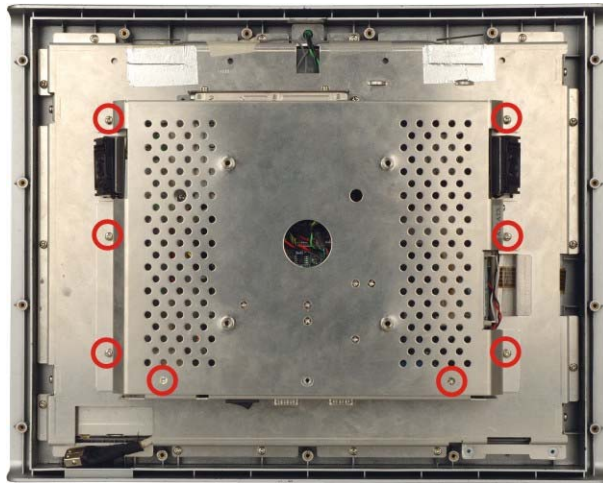
### 3.6 HDD Installation

To install the HDD into the AFOLUX CX series, please follow the steps below:

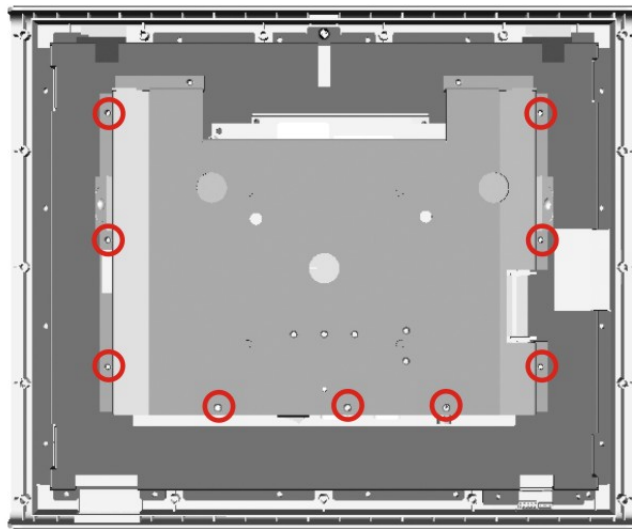
**Step 1:** Remove the plastic back cover. See **Section 3.5** above.

**Step 2:** Remove the retention screws securing the internal aluminum cover (Figure 3-5,

**Figure 3-6 and Figure 3-7)** and lift the aluminum cover off the panel PC.



**Figure 3-5: AFL-15A-CX Aluminum Back Cover Retention Screws**



**Figure 3-6: AFL-17A-CX Aluminum Back Cover Retention Screws**



## AFOLUX CX Series Flat Panel PC

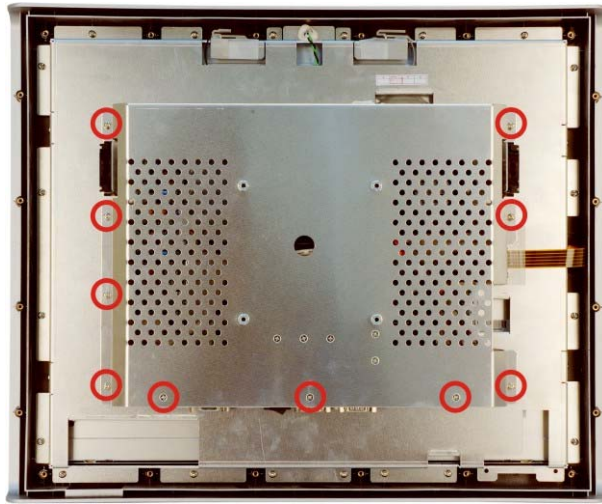


Figure 3-7: AFL-19A-CX Aluminum Back Cover Retention Screws

**Step 3:** Remove the four HDD bracket retention screws (**Figure 3-8**) and lift the HDD bracket off the panel PC.

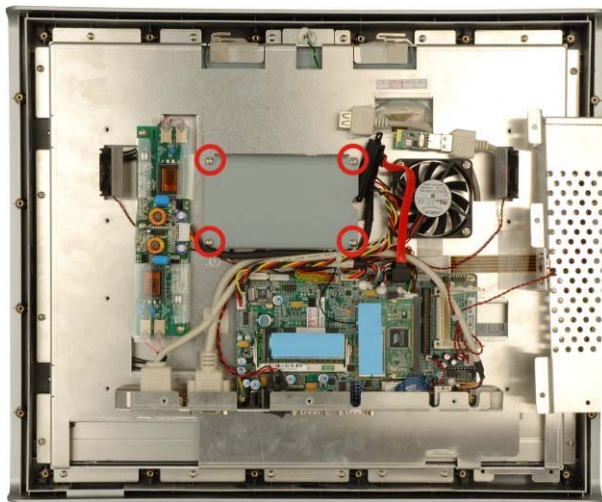


Figure 3-8: AFL-19A-CX HDD Bracket Retention Screws

**Step 4:** Attach the HDD brackets to the HDD. To do this, align the four retention screw holes in the both sides of the HDD bracket with the retention screw holes on the sides of the HDD. Insert four retention screws into the HDD bracket (**Figure**



3-9).

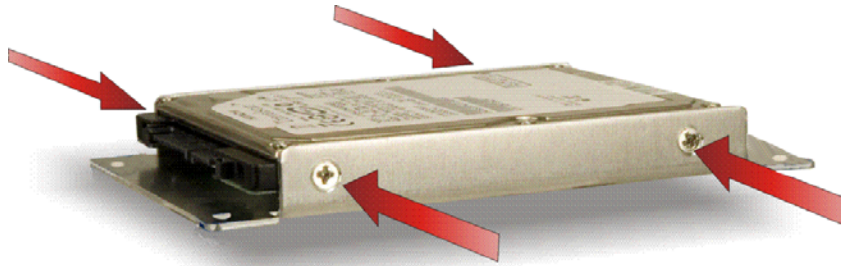


Figure 3-9: AFL-CX HDD Retention Screws

**Step 5:** Connect the SATA/IDE cable to the rear of HDD.

**Step 6:** Install the HDD into the panel PC by aligning the retention screw holes in the HDD brackets with the retention screw holes on the chassis. Insert the four retention screws.

**Step 7:** Replace the aluminum back cover to the chassis.

**Step 8:** Replace the plastic back cover.

### 3.7 Mounting the System



#### **WARNING!**

When mounting the flat panel PC onto an arm, onto the wall or onto a panel, it is better to have more than one person to help with the installation to make sure the panel PC does not fall down and get damaged.

The four methods of mounting the AFOLUX CX are listed below.

- Wall mounting
- Stand/Arm mounting

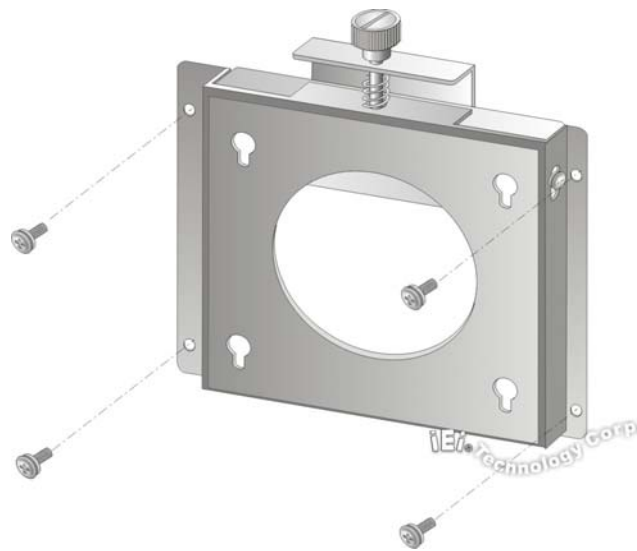
The four mounting methods are described below.

## AFOLUX CX Series Flat Panel PC

### 3.7.1 Wall Mounting

To mount the flat panel PC onto the wall, please follow the steps below.

- Step 1:** Select the location on the wall for the wall-mounting bracket.
- Step 2:** Carefully mark the locations of the four brackets screw holes on the wall.
- Step 3:** Drill four pilot holes at the marked locations on the wall for the bracket retention screws.
- Step 4:** Align the wall-mounting bracket screw holes with the pilot holes.
- Step 5:** Secure the mounting-bracket to the wall by inserting the retention screws into the four pilot holes and tightening them (**Figure 3-10**).



**Figure 3-10: Wall-mounting Bracket**

- Step 6:** Insert the four monitor mounting screws provided in the wall mounting kit into the four screw holes on the rear panel of the flat panel PC and tighten until the screw shank is secured against the rear panel (**Figure 3-11**).
- Step 7:** Align the mounting screws on the monitor rear panel with the mounting holes on the bracket.

**Step 8:** Carefully insert the screws through the holes and gently pull the monitor downwards until the monitor rests securely in the slotted holes (**Figure 3-11**). Ensure that all four of the mounting screws fit snugly into their respective slotted holes.

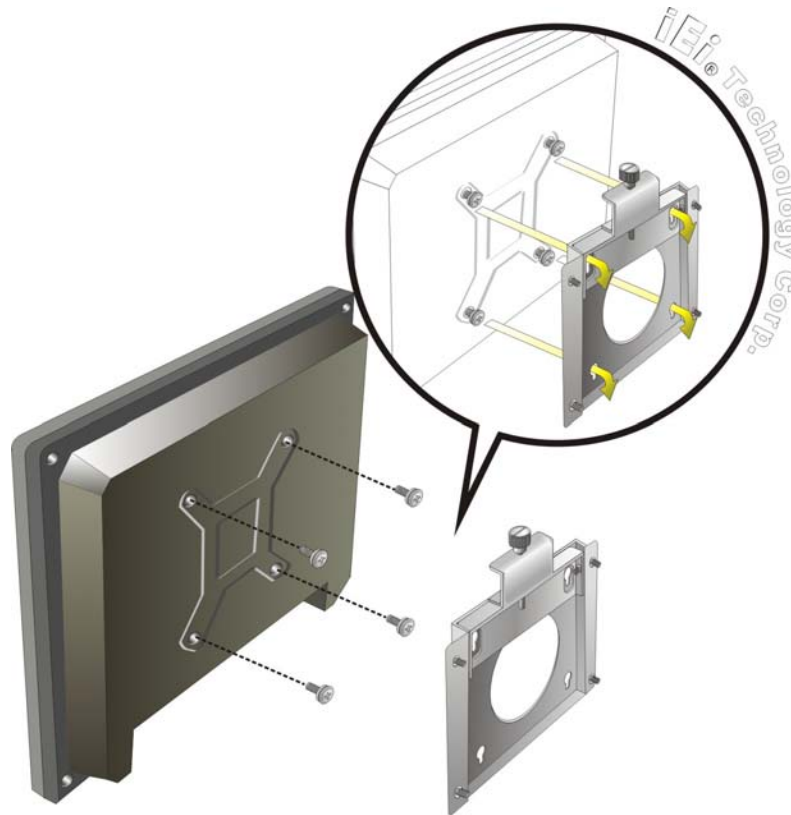


Figure 3-11: Chassis Support Screws



**NOTE:**

In the diagram below the bracket is already installed on the wall.

**Step 9:** Secure the panel PC by fastening the retention screw of the wall-mounting bracket. (**Figure 3-12**).

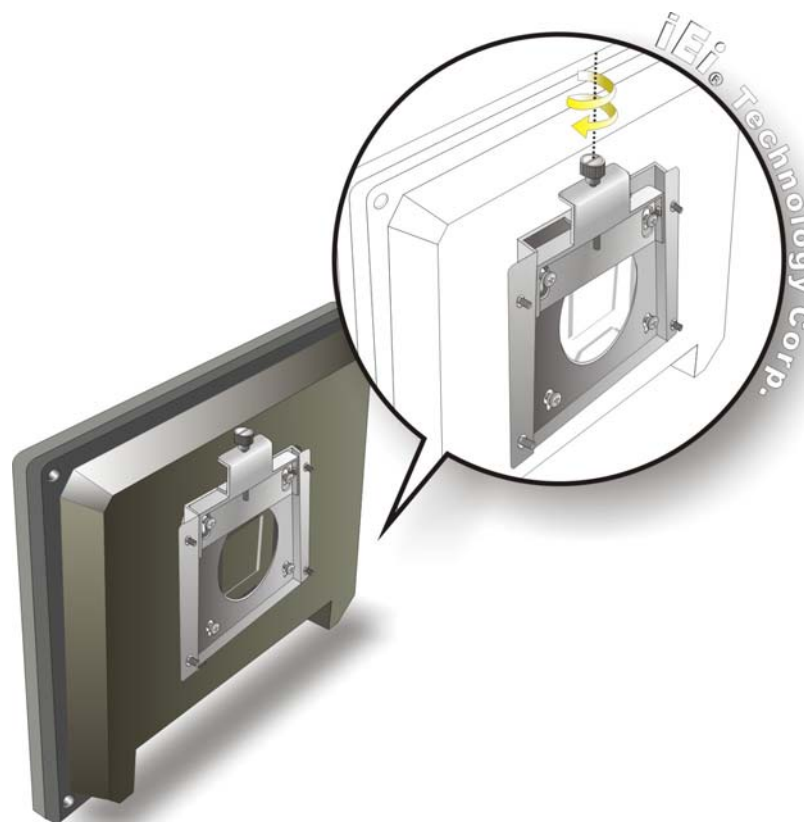


Figure 3-12: Secure the Panel PC

### 3.7.2 Arm Mounting

The AFOLUX CX series is VESA (Video Electronics Standards Association) compliant and can be mounted on an arm with a 100mm interface pad. To mount the AFOLUX CX series on an arm, please follow the steps below.

**Step 1:** The arm is a separately purchased item. Please correctly mount the arm onto the surface it uses as a base. To do this, refer to the installation documentation that came with the mounting arm.



#### NOTE:

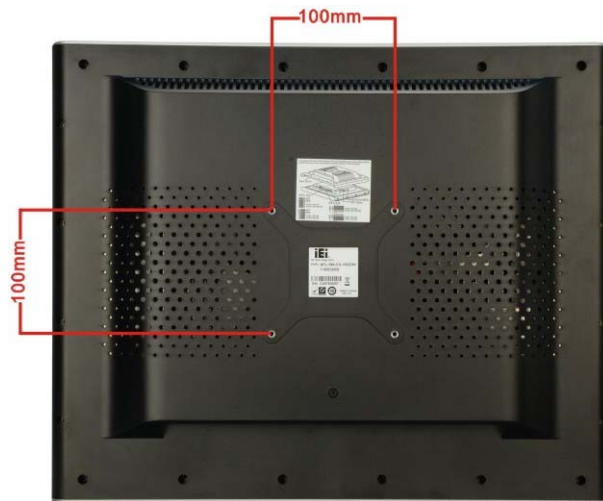
When purchasing the arm please ensure that it is VESA compliant and that



the arm has a 100mm interface pad. If the mounting arm is not VESA compliant it cannot be used to support the AFOLUX CX series flat panel PC.

**Step 2:** Once the mounting arm has been firmly attached to the surface, lift the flat panel PC onto the interface pad of the mounting arm.

**Step 3:** Align the retention screw holes on the mounting arm interface with those in the flat panel PC. The AFL-CX arm mount retention screw holes are shown in **Figure 3-13**.



**Figure 3-13: AFL-CX Arm Mounting Retention Screw Holes**

**Step 4:** Secure the flat panel PC to the interface pad by inserting four retention screws through the bottom of the mounting arm interface pad and into the flat panel PC.



## AFOLUX CX Series Flat Panel PC

### 3.8 Bottom Panel Connectors

#### 3.8.1 LAN Connection

There are two external RJ-45 LAN connectors. The RJ-45 connectors enable connection to an external network. To connect a LAN cable with an RJ-45 connector, please follow the instructions below.

**Step 1:** Locate the RJ-45 connectors on the bottom panel of the AFOLUX CX Series.

**Step 2:** Align the connectors. Align the RJ-45 connector on the LAN cable with one of the RJ-45 connectors on the bottom panel of the AFOLUX CX Series. See Figure 3-14.

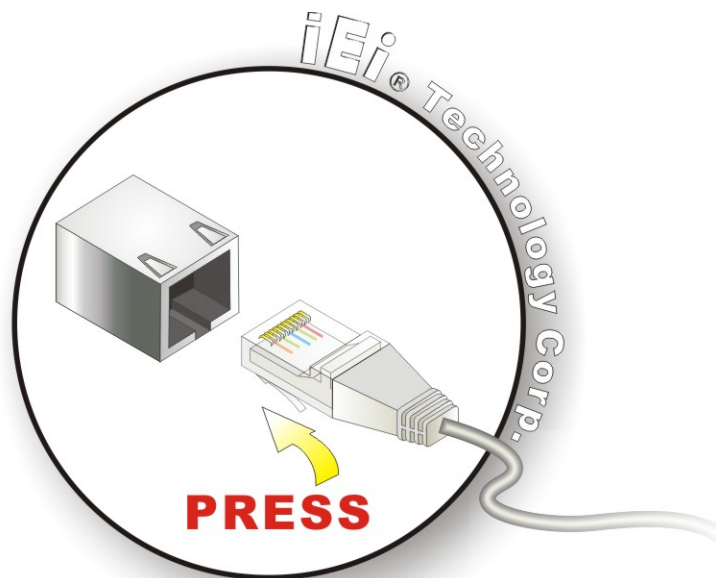


Figure 3-14: LAN Connection

**Step 3:** Insert the LAN cable RJ-45 connector. Once aligned, gently insert the LAN cable RJ-45 connector into the onboard RJ-45 connector.

### 3.8.2 Serial Device Connection

The AFOLUX CX Series has two single female DB-9 connectors on the bottom panel for a serial device. Follow the steps below to connect a serial device to the AFOLUX CX Series panel PC.

**Step 1: Locate the DB-9 connector.** The location of the DB-9 connector is shown in Chapter 2.

**Step 2: Insert the serial connector.** Insert the DB-9 connector of a serial device into the DB-9 connector on the bottom panel. See **Figure 3-15**.

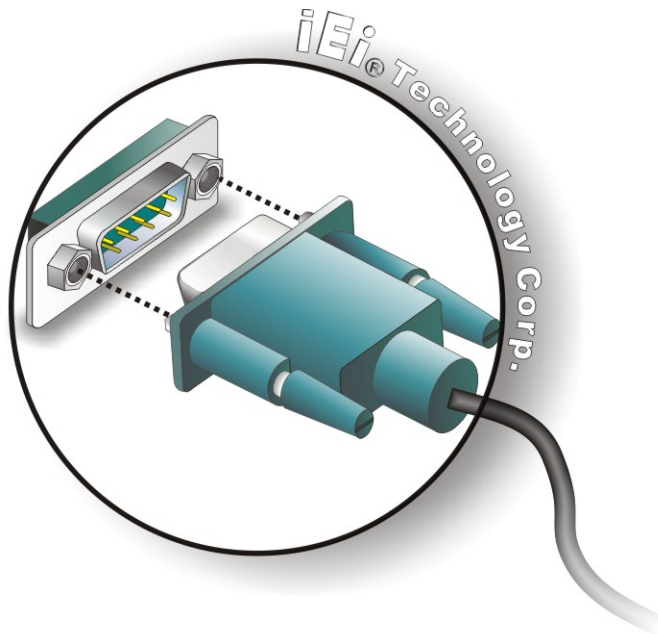


Figure 3-15: Serial Device Connector

**Step 3: Secure the connector.** Secure the serial device connector to the external interface by tightening the two retention screws on either side of the connector.

## AFOLUX CX Series Flat Panel PC

### 3.8.3 USB Device Connection

There are four external USB 2.0 connectors. All connectors are perpendicular to the AFOLUX CX Series. To connect a USB 2.0 or USB 1.1 device, please follow the instructions below.

**Step 1:** **Located the USB connectors.** The locations of the USB connectors are shown in **Chapter 2**.

**Step 2:** **Align the connectors.** Align the USB device connector with one of the connectors on the bottom panel. See **Figure 3-16**.

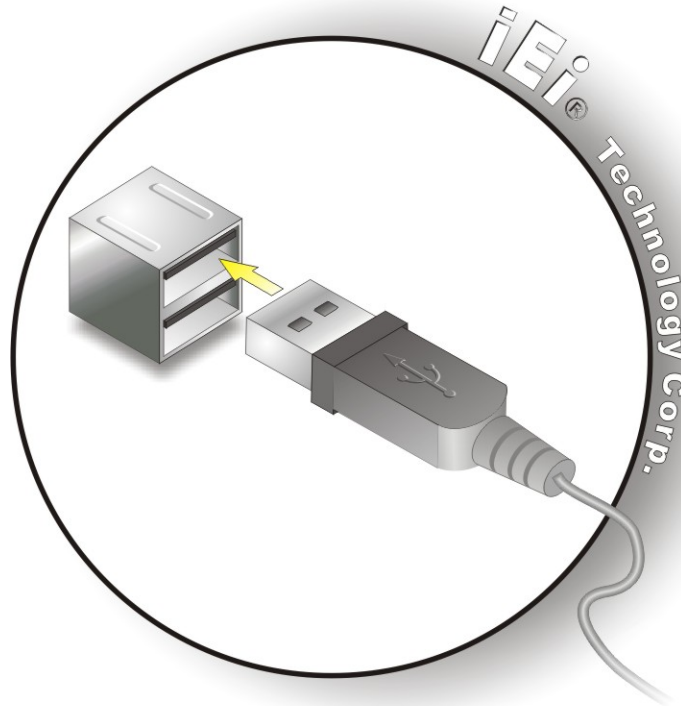


Figure 3-16: USB Device Connection

**Step 3:** **Insert the device connector.** Once aligned, gently insert the USB device connector into the onboard connector.

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Chapter

4

# System Maintenance

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## 4.1 System Maintenance Introduction

If the components of the AFOLUX CX series fail they must be replaced, such as the wireless LAN module or the motherboard. Please contact the system reseller or vendor to purchase the replacement parts. Back cover removal instructions and jumper settings for the AFOLUX CX series are described below.

## 4.2 Motherboard Replacement

A user cannot replace a motherboard. If the motherboard fails it must be shipped back to IEI to be replaced. If the system motherboard has failed, please contact the system vendor, reseller or an IEI sales person directly.

## 4.3 Internal Aluminum Cover Removal



### **WARNING!**

**BEFORE REMOVING THE BACK COVER, MAKE SURE THE POWER IS OFF.** Failing to do so may lead to severe damage of AFOLUX CX series and injury to the body.

---



### **WARNING!**

**PLEASE TAKE ANTISTATIC PRECAUTIONS WHEN WORKING WITH THE INTERNAL COMPONENTS.** The interior of the AFOLUX CX series contains very sensitive electronic components. These components are easily damaged by electrostatic discharge (ESD). Before working with the internal components make sure all the anti-static precautions described earlier have been observed.

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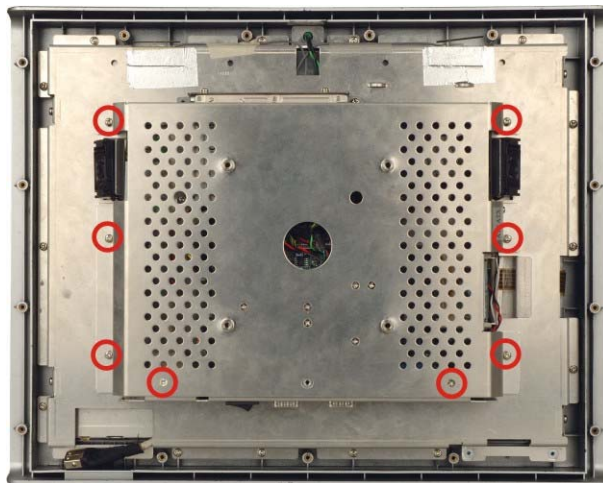
To replace any of the following components,

## AFOLUX CX Series Flat Panel PC

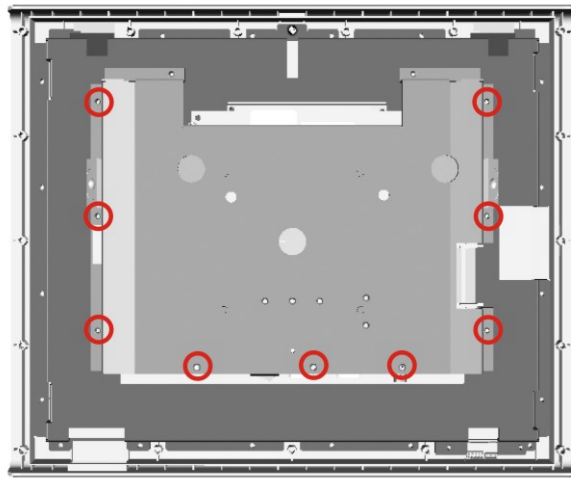
- Motherboard
- DDR2 memory module
- Wireless LAN module
- Bluetooth module
- GPRS module
- Inverter

The internal aluminum back cover of the AFOLUX CX series must be removed. To remove the aluminum back cover, please follow the steps below.

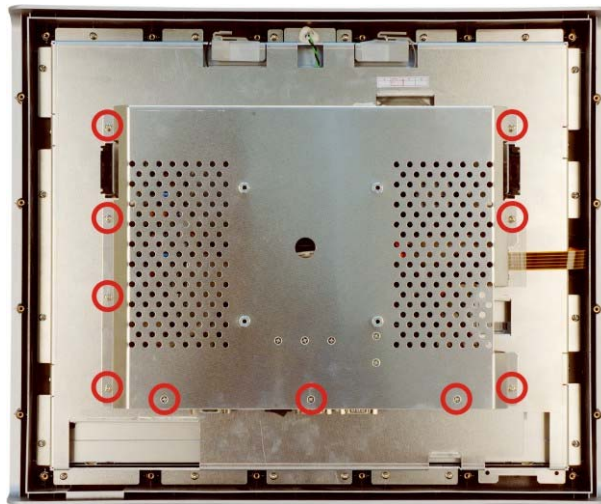
**Step 1:** Remove the retention screws securing the internal aluminum cover (**Figure 4-1**, **Figure 4-2** and **Figure 4-3**).



**Figure 4-1: AFL-15A-CX Aluminum Back Cover Retention Screws**



**Figure 4-2: AFL-17A-CX Aluminum Back Cover Retention Screws**



**Figure 4-3: AFL-19A-CX Aluminum Back Cover Retention Screws**

**Step 2:** Lift the aluminum cover off the AFOLUX CX series. The AT/ATX switch on the aluminum cover is connected to the motherboard. Please be caution when lifting the cover.

## AFOLUX CX Series Flat Panel PC

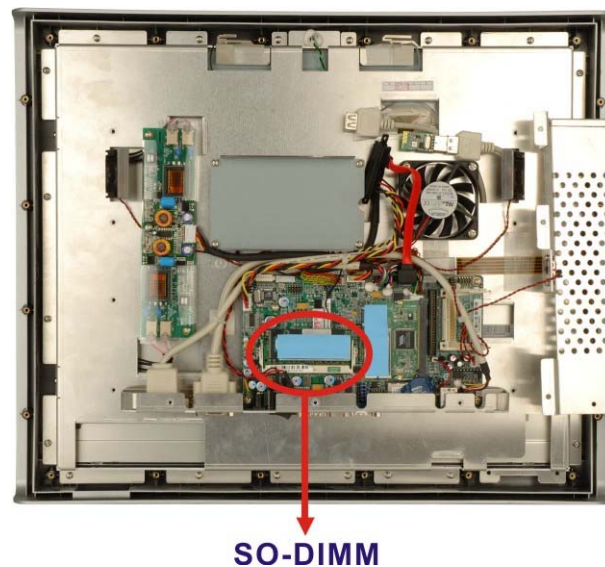
### 4.4 Memory Module Replacement

The flat panel PC is preinstalled with a 512MB DDR2 memory module. If the memory module is fail, follow the instructions below to replace the memory module.

**Step 1:** Remove the back cover. See **Section 3.5** above.

**Step 2:** Remove the internal aluminum back cover. See **Section 4.3** above.

**Step 3:** Locate the DDR2 memory module on the motherboard of the flat panel PC  
(Figure 4-4).



**Figure 4-4: SO-DIMM Socket Location**

**Step 4:** Remove the thermal pad off the memory module.

**Step 5:** Remove the DDR2 memory module by pulling both the spring retainer clips outward from the socket.

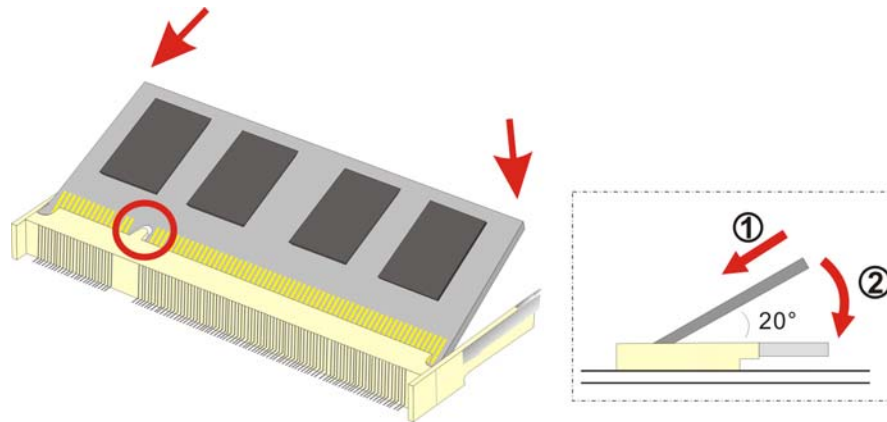
**Step 6:** Grasp the DDR2 memory module by the edges and carefully pull it out of the socket.

**Step 7:** Install the new DDR2 memory module by pushing it into the socket at an angle  
(Figure 4-5).



**Step 8:** Gently pull the spring retainer clips of the SO-DIMM socket out and push the rear of the DDR2 memory module down (**Figure 4-5**).

**Step 9:** Release the spring retainer clips on the SO-DIMM socket. They clip into place and secure the DDR2 memory module in the socket.



**Figure 4-5: DDR2 SO-DIMM Module Installation**

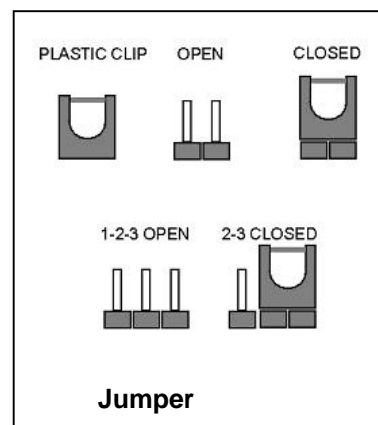
**Step 10:** Re-insert the thermal pad into the memory module.

## 4.5 Jumper Settings



### NOTE:

A jumper is a metal bridge that is used to close an electrical circuit. It consists of two metal pins and a small metal clip (often protected by a plastic cover) that slides over the pins to connect them. To CLOSE/SHORT a jumper means connecting the pins of the jumper with the plastic clip and to OPEN a jumper means removing the plastic clip from a jumper.





## AFOLUX CX Series Flat Panel PC

The motherboard comes with two jumpers. They are listed below.

- LCD voltage select (J4)
- COM2 mode (RS-232/485) select (JP7)
- COM2 mode (RS-232/422/485) select (JP8)

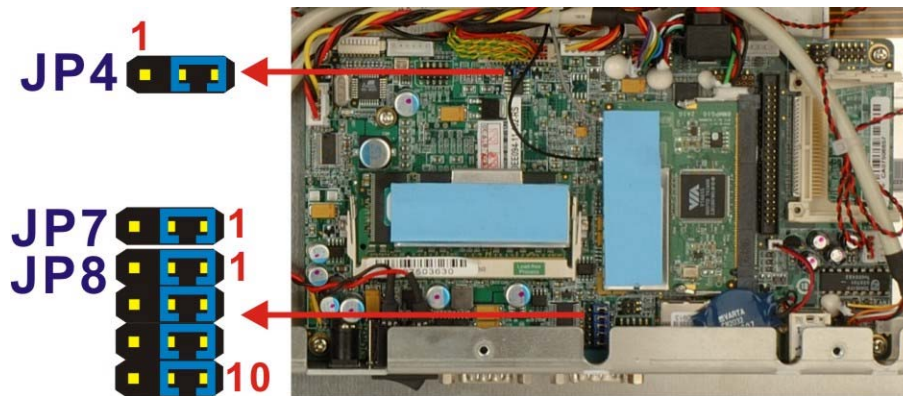


Figure 4-6: Jumper Locations

### 4.5.1 J4: LCD Voltage Select Jumper Settings



#### **WARNING!**

Do not change this voltage. This voltage has been preset and is compatible with the currently installed 12.1" TFT LCD screen. Change this jumper setting may cause damage to the system.

The LCD Voltage Setup jumper sets the voltage for the LCD screen. This setting **MUST** NOT be changed.

| JP4       | DESCRIPTION    |
|-----------|----------------|
| Short 1-2 | LCDVCC = +3.3V |
| Short 2-3 | LCDVCC = +5V   |

Table 4-1: LCD Voltage Setup Jumper Settings

#### 4.5.2 JP7: COM2 Mode Select Jumper Settings

The COM2 can be selected as RS-232 or RS-485.

| JP7       | Description |         |
|-----------|-------------|---------|
| Short 1-2 | RS-232      | Default |
| Short 2-3 | RS-485      |         |

Table 4-2: COM2 Mode Select Jumper Settings

#### 4.5.3 JP8: COM2 Mode Select Jumper Settings

The COM2 can be selected as RS-232 or RS-485.

| JP8         | Description |         |
|-------------|-------------|---------|
| Short 1-2   | RS-232      | Default |
| Short 2-3   | RS-485      |         |
| Short 4-5   | RS-232      |         |
| Short 5-6   | RS-485      |         |
| Short 7-8   | RS-232      |         |
| Short 8-9   | RS-485      |         |
| Short 10-11 | RS-232      |         |
| Short 11-12 | RS-485      |         |

Table 4-3: COM2 Mode Select Jumper Settings

Chapter

**5**

# AMI BIOS Setup

---

## 5.1 Introduction

A licensed copy of AMI BIOS is preprogrammed into the ROM BIOS. The BIOS setup program allows users to modify the basic system configuration. This chapter describes how to access the BIOS setup program and the configuration options that may be changed.

### 5.1.1 Starting Setup

The AMI BIOS is activated when the computer is turned on. The setup program can be activated in one of two ways.

1. Press the **DELETE** key as soon as the system is turned on or
2. Press the **DELETE** key when the “**Press Del to enter SETUP**” message appears on the screen.

If the message disappears before the **DELETE** key is pressed, restart the computer and try again.

### 5.1.2 Using Setup

Use the arrow keys to highlight items, press **ENTER** to select, use the PageUp and PageDown keys to change entries, press **F1** for help and press **Esc** to quit. Navigation keys are shown in.

| Key         | Function                                                                                                                                             |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Up arrow    | Move to previous item                                                                                                                                |
| Down arrow  | Move to next item                                                                                                                                    |
| Left arrow  | Move to the item on the left hand side                                                                                                               |
| Right arrow | Move to the item on the right hand side                                                                                                              |
| Esc key     | Main Menu – Quit and not save changes into CMOS<br>Status Page Setup Menu and Option Page Setup Menu --<br>Exit current page and return to Main Menu |
| Page Up key | Increase the numeric value or make changes                                                                                                           |
| Page Dn key | Decrease the numeric value or make changes                                                                                                           |



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|            |                                                                          |
|------------|--------------------------------------------------------------------------|
| F1 key     | General help, only for Status Page Setup Menu and Option Page Setup Menu |
| F2 /F3 key | Change color from total 16 colors. F2 to select color forward.           |
| F10 key    | Save all the CMOS changes, only for Main Menu                            |

**Table 5-1: BIOS Navigation Keys**

### 5.1.3 Getting Help

When **F1** is pressed a small help window describing the appropriate keys to use and the possible selections for the highlighted item appears. To exit the Help Window press **Esc** or the **F1** key again.

### 5.1.4 Unable to Reboot After Configuration Changes

If the computer cannot boot after changes to the system configuration is made, CMOS defaults. Use the jumper described in Chapter **Chapter 4, Section 4.5**.

### 5.1.5 BIOS Menu Bar

The **menu bar** on top of the BIOS screen has the following main items:

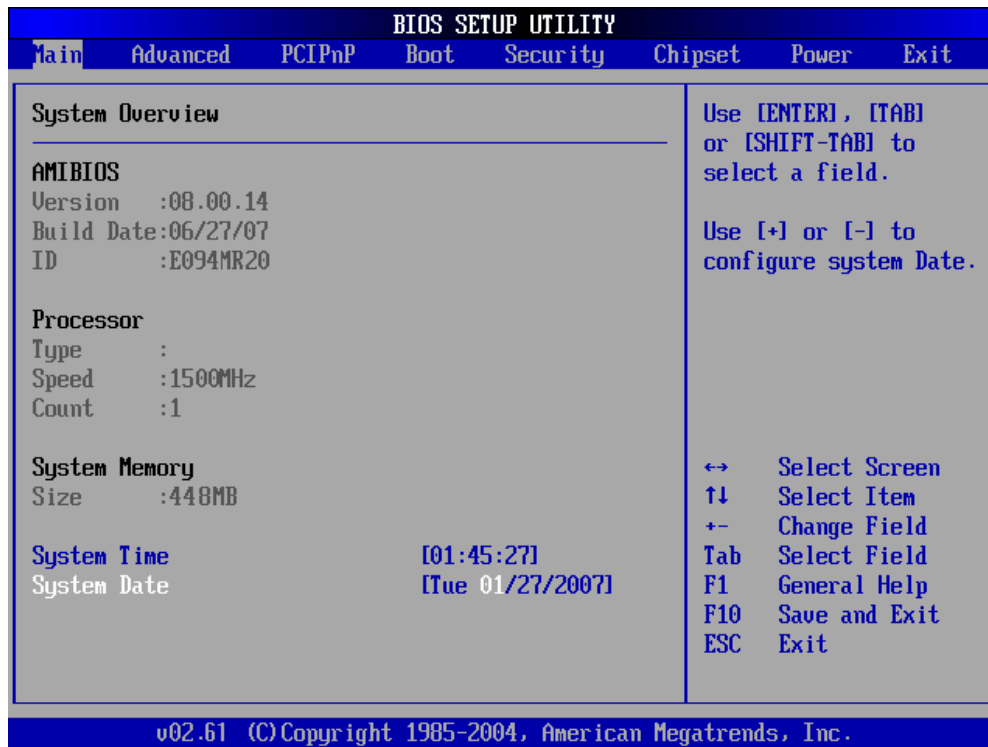
- **Main** Changes the basic system configuration.
- **Advanced** Changes the advanced system settings.
- **PCIPnP** Changes the advanced PCI/PnP Settings
- **Boot** Changes the system boot configuration.
- **Security** Sets User and Supervisor Passwords.
- **Chipset** Changes the chipset settings.
- **Exit** Selects exit options and loads default settings

The following sections completely describe the configuration options found in the menu items at the top of the BIOS screen and listed above.

## 5.2 Main

The **Main** BIOS menu (**BIOS Menu 1**) appears when the **BIOS Setup** program is entered.

The **Main** menu gives an overview of the basic system information.



**BIOS Menu 1: Main**

### → System Overview

The **System Overview** lists a brief summary of different system components. The fields in

**System Overview** cannot be changed. The items shown in the system overview include:

- **AMI BIOS:** Displays auto-detected BIOS information
  - **Version:** Current BIOS version
  - **Build Date:** Date the current BIOS version was made
  - **ID:** Installed BIOS ID
- **Processor:** Displays auto-detected CPU specifications
  - **Type:** Names the currently installed processor
  - **Speed:** Lists the processor speed

## AFOLUX CX Series Flat Panel PC

- **Count:** The number of CPUs on the motherboard
- **System Memory:** Displays the auto-detected system memory.
- **Size:** Lists memory size

The **System Overview** field also has two user configurable fields:

→ **System Time [xx:xx:xx]**

Use the **System Time** option to set the system time. Manually enter the hours, minutes and seconds.

→ **System Date [xx/xx/xx]**

Use the **System Date** option to set the system date. Manually enter the day, month and year.

### 5.3 Advanced

Use the **Advanced** menu (**BIOS Menu 2**) to configure the CPU and peripheral devices through the following sub-menus:



#### **WARNING!**

Setting the wrong values in the sections below may cause the system to malfunction. Make sure that the settings made are compatible with the hardware.

---

- CPU Configuration (see **Section 5.3.1**)
- IDE Configuration (see **Section 5.3.2**)
- Super IO Configuration (see **Section 5.3.3**)
- ACPI Configuration (see **Section 5.3.4**)
- APM Configuration (see **Section 5.3.5**)
- Remote Access Configuration (see **Section 5.3.6**)
- USB Configuration (see **Section 5.3.7**)



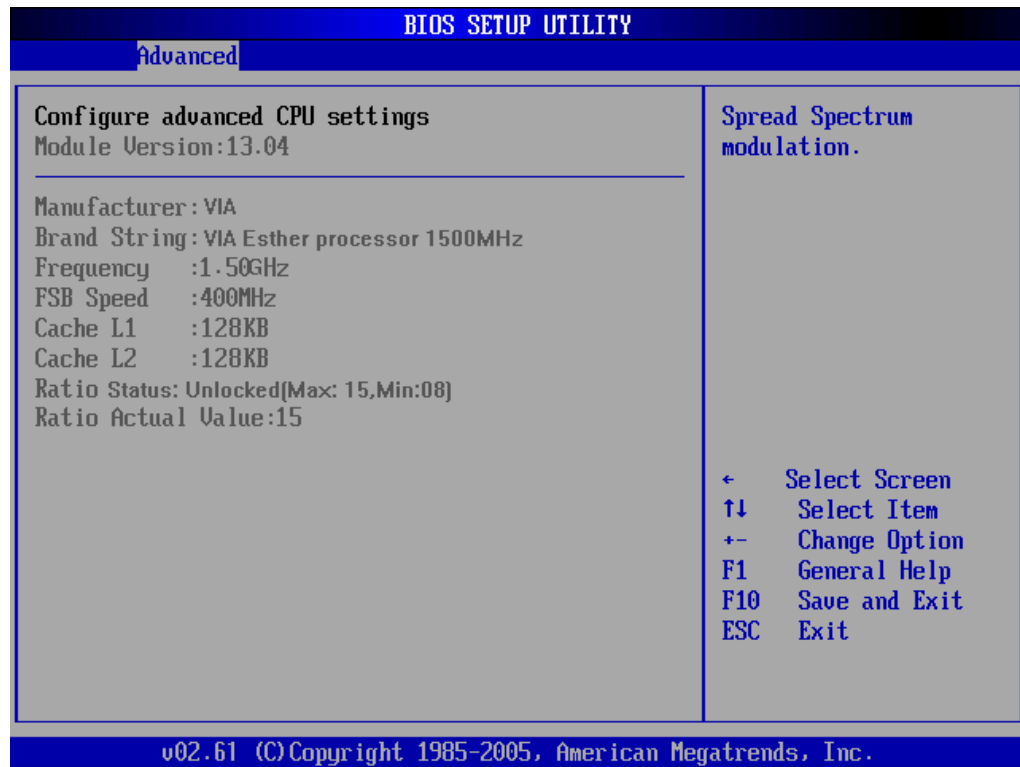
**BIOS Menu 2: Advanced**

### 5.3.1 CPU Configuration

Use the **CPU Configuration** menu (**BIOS Menu 3**) to view detailed CPU specifications and configure the CPU.



## AFOLUX CX Series Flat Panel PC

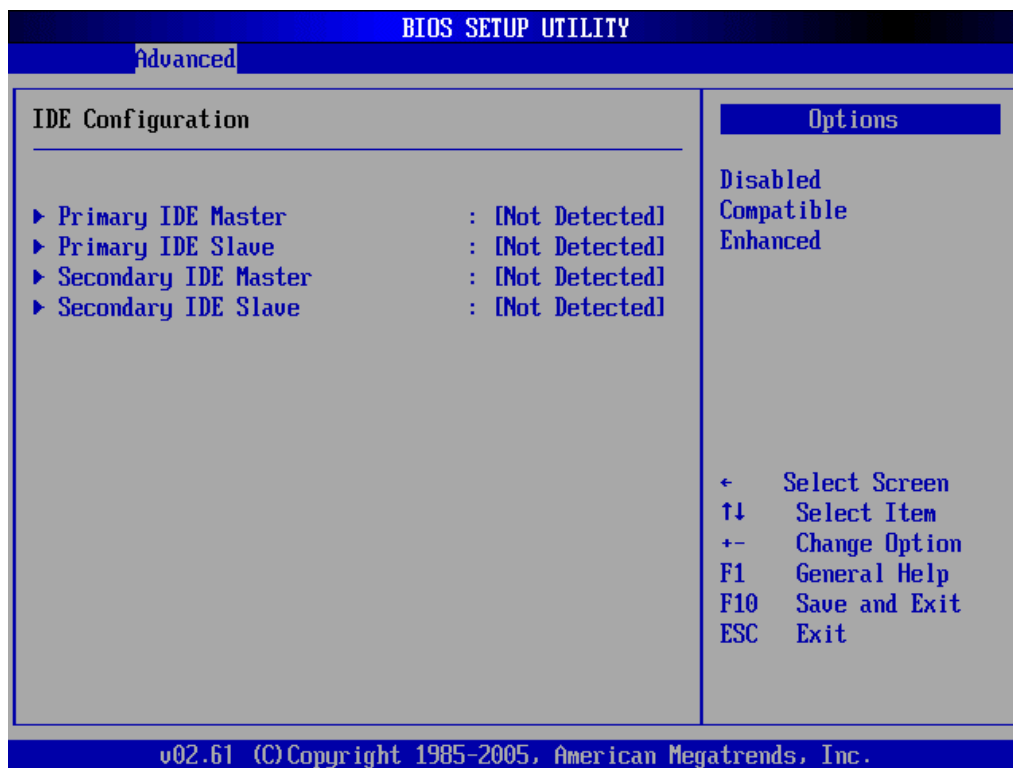
**BIOS Menu 3: CPU Configuration**

The CPU Configuration menu (**BIOS Menu 3**) lists the following CPU details:

- **Manufacturer:** Lists the name of the CPU manufacturer
- **Brand String:** Lists the brand name of the CPU being used
- **Frequency:** Lists the CPU processing speed
- **FSB Speed:** Lists the FSB speed
- **Cache L1:** Lists the CPU L1 cache size
- **Cache L2:** Lists the CPU L2 cache size

**5.3.2 IDE Configuration**

Use the **IDE Configuration** menu (**BIOS Menu 4**) to change and/or set the configuration of the IDE devices installed in the system.



**BIOS Menu 4: IDE Configuration**

#### ➔ IDE Master and IDE Slave

When entering setup, BIOS auto detects the presence of IDE devices. BIOS displays the status of the auto detected IDE devices. The following IDE devices are detected and are shown in the **IDE Configuration** menu:

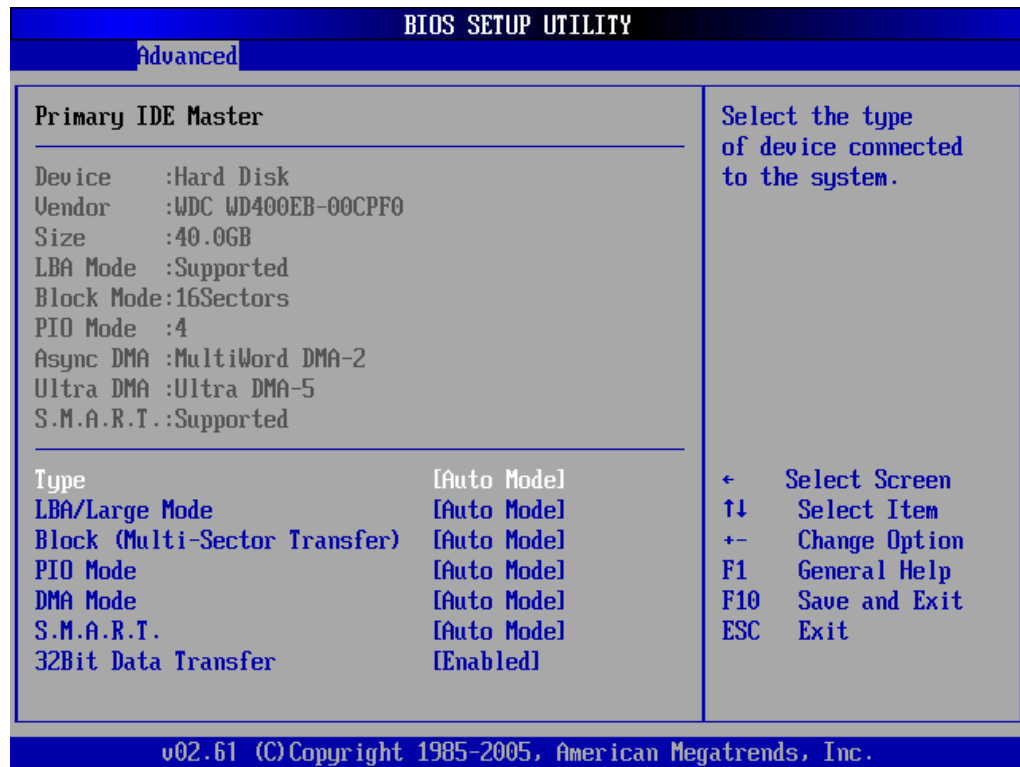
- Primary IDE Master
- Primary IDE Slave
- Secondary IDE Master
- Secondary IDE Slave

The **IDE Configuration** menu (**BIOS Menu 4**) allows changes to the configurations for the IDE devices installed in the system. If an IDE device is detected, and one of the above listed four BIOS configuration options are selected, the IDE configuration options shown in **Section 5.3.2.1** appear.

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### 5.3.2.1 IDE Master, IDE Slave

Use the **IDE Master** and **IDE Slave** configuration menu to view both primary and secondary IDE device details and configure the IDE devices connected to the system.



**BIOS Menu 5: IDE Master and IDE Slave Configuration**

#### → Auto-Detected Drive Parameters

The “grayed-out” items in the left frame are IDE disk drive parameters automatically detected from the firmware of the selected IDE disk drive. The drive parameters are listed as follows:

- **Device:** Lists the device type (e.g. hard disk, CD-ROM etc.)
- **Vendor:** Lists the device manufacturer
- **Size:** List the storage capacity of the device.
- **LBA Mode:** Indicates whether the LBA (Logical Block Addressing) is a method of addressing data on a disk drive is supported or not.
- **Block Mode:** Block mode boosts IDE drive performance by increasing the

amount of data transferred. Only 512 bytes of data can be transferred per interrupt if block mode is not used. Block mode allows transfers of up to 64 KB per interrupt.

- **PIO Mode:** Indicates the PIO mode of the installed device.
- **Async DMA:** Indicates the highest Asynchronous DMA Mode that is supported.
- **Ultra DMA:** Indicates the highest Synchronous DMA Mode that is supported.
- **S.M.A.R.T.:** Indicates whether or not the Self-Monitoring Analysis and Reporting Technology protocol is supported.

### → **Type [Auto]**

Use the **Type** BIOS option select the type of device the AMIBIOS attempts to boot from after the Power-On Self-Test (POST) is complete.

- |   |                            |                                                                                                                                                                                                 |
|---|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| → | <b>Not Installed</b>       | BIOS is prevented from searching for an IDE disk drive on the specified channel.                                                                                                                |
| → | <b>Auto</b> <b>DEFAULT</b> | The BIOS auto detects the IDE disk drive type attached to the specified channel. This setting should be used if an IDE hard disk drive is attached to the specified channel.                    |
| → | <b>CD/DVD</b>              | The CD/DVD option specifies that an IDE CD-ROM drive is attached to the specified IDE channel. The BIOS does not attempt to search for other types of IDE disk drives on the specified channel. |
| → | <b>ARMD</b>                | This option specifies an ATAPI Removable Media Device. These include, but are not limited to:                                                                                                   |

→ **ZIP**

→ **LS-120**



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### → LBA/Large Mode [Auto]

Use the **LBA/Large Mode** option to disable or enable BIOS to auto detects LBA (Logical Block Addressing). LBA is a method of addressing data on a disk drive. In LBA mode, the maximum drive capacity is 137 GB.

- **Disabled** BIOS is prevented from using the LBA mode control on the specified channel.
- **Auto** **DEFAULT** BIOS auto detects the LBA mode control on the specified channel.

### → Block (Multi Sector Transfer) [Auto]

Use the **Block (Multi Sector Transfer)** to disable or enable BIOS to auto detect if the device supports multi-sector transfers.

- **Disabled** BIOS is prevented from using Multi-Sector Transfer on the specified channel. The data to and from the device occurs one sector at a time.
- **Auto** **DEFAULT** BIOS auto detects Multi-Sector Transfer support on the drive on the specified channel. If supported the data transfer to and from the device occurs multiple sectors at a time.

### → PIO Mode [Auto]

Use the **PIO Mode** option to select the IDE PIO (Programmable I/O) mode program timing cycles between the IDE drive and the programmable IDE controller. As the PIO mode increases, the cycle time decreases.

- **Auto** **DEFAULT** BIOS auto detects the PIO mode. Use this value if the IDE disk drive support cannot be determined.

- **0**                      PIO mode 0 selected with a maximum transfer rate of 3.3MBps
  - **1**                      PIO mode 1 selected with a maximum transfer rate of 5.2MBps
  - **2**                      PIO mode 2 selected with a maximum transfer rate of 8.3MBps
  - **3**                      PIO mode 3 selected with a maximum transfer rate of 11.1MBps
  - **4**                      PIO mode 4 selected with a maximum transfer rate of 16.6MBps
- (This setting generally works with all hard disk drives manufactured after 1999. For other disk drives, such as IDE CD-ROM drives, check the specifications of the drive.)

#### → **DMA Mode [Auto]**

Use the **DMA Mode** BIOS selection to adjust the DMA mode options.

- **Auto**              **DEFAULT**      BIOS auto detects the DMA mode. Use this value if the IDE disk drive support cannot be determined.
- **SWDMA0**                      Single Word DMA mode 0 selected with a maximum data transfer rate of 2.1MBps
- **SWDMA1**                      Single Word DMA mode 1 selected with a maximum data transfer rate of 4.2MBps
- **SWDMA2**                      Single Word DMA mode 2 selected with a maximum data transfer rate of 8.3MBps
- **MWDMA0**                      Multi Word DMA mode 0 selected with a maximum data transfer rate of 4.2MBps
- **MWDMA1**                      Multi Word DMA mode 1 selected with a maximum data transfer rate of 13.3MBps
- **MWDMA2**                      Multi Word DMA mode 2 selected with a maximum data transfer rate of 16.6MBps

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- ➔ **UDMA1** Ultra DMA mode 0 selected with a maximum data transfer rate of 16.6MBps
- ➔ **UDMA1** Ultra DMA mode 1 selected with a maximum data transfer rate of 25MBps
- ➔ **UDMA2** Ultra DMA mode 2 selected with a maximum data transfer rate of 33.3MBps
- ➔ **UDMA3** Ultra DMA mode 3 selected with a maximum data transfer rate of 44MBps (To use this mode, it is required that an 80-conductor ATA cable is used.)
- ➔ **UDMA4** Ultra DMA mode 4 selected with a maximum data transfer rate of 66.6MBps (To use this mode, it is required that an 80-conductor ATA cable is used.)
- ➔ **UDMA5** Ultra DMA mode 5 selected with a maximum data transfer rate of 99.9MBps (To use this mode, it is required that an 80-conductor ATA cable is used.)

### ➔ **S.M.A.R.T [Auto]**

Use the **S.M.A.R.T** option to auto-detect, disable or enable Self-Monitoring Analysis and Reporting Technology (SMART) on the drive on the specified channel. **S.M.A.R.T** predicts impending drive failures. The **S.M.A.R.T** BIOS option enables or disables this function.

- ➔ **Auto** **DEFAULT** BIOS auto detects HDD SMART support.
- ➔ **Disabled** Prevents BIOS from using the HDD SMART feature.
- ➔ **Enabled** Allows BIOS to use the HDD SMART feature

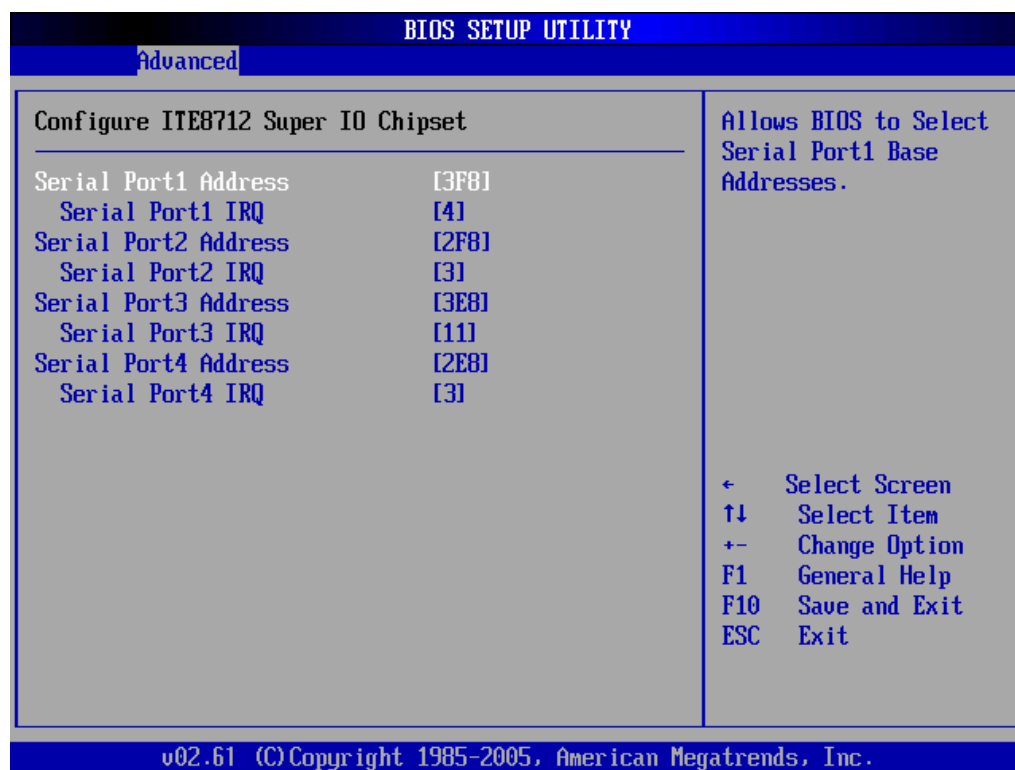
### ➔ **32Bit Data Transfer [Enabled]**

Use the **32Bit Data Transfer** BIOS option to enables or disable 32-bit data transfers.

- ➔ **Disabled** Prevents the BIOS from using 32-bit data transfers.
- ➔ **Enabled** **DEFAULT** Allows BIOS to use 32-bit data transfers on supported hard disk drives.

### 5.3.3 Super IO Configuration

Use the **Super IO Configuration** menu (**BIOS Menu 6**) to set or change the configurations for the FDD controllers, parallel ports and serial ports.



**BIOS Menu 6: Super IO Configuration**

#### ➔ **Serial Port1 Address [3F8]**

Use the **Serial Port1 Address** option to select the Serial Port 1 base address.

- ➔ **Disabled** No base address is assigned to Serial Port 1
- ➔ **3F8** **DEFAULT** Serial Port 1 I/O port address is 3F8



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- ➔ 2F8                      Serial Port 1 I/O port address is 2F8
- ➔ 3E8                      Serial Port 1 I/O port address is 3E8
- ➔ 2E8                      Serial Port 1 I/O port address is 2E8

### ➔ Serial Port1 IRQ [4]

Use the **Serial Port1 IRQ** option to select the interrupt address for serial port 1.

- ➔ 4              **DEFAULT**      Serial port 1 IRQ address is 4

### ➔ Serial Port2 Address [2F8]

Use the **Serial Port2 Address** option to select the Serial Port 2 base address.

- ➔ Disabled                      No base address is assigned to Serial Port 2
- ➔ 2F8              **DEFAULT**      Serial Port 2 I/O port address is 3F8
- ➔ 2F8                      Serial Port 1 I/O port address is 2F8
- ➔ 3E8                      Serial Port 2 I/O port address is 3E8
- ➔ 2E8                      Serial Port 2 I/O port address is 2E8

### ➔ Serial Port2 IRQ [3]

Use the **Serial Port2 IRQ** option to select the interrupt address for serial port 2.

- ➔ 3              **DEFAULT**      Serial port 2 IRQ address is 3

### ➔ Serial Port3 Address [3E8]

Use the **Serial Port3 Address** option to select the base addresses for serial port 3

- ➔ Disabled                      No base address is assigned to serial port 3
- ➔ 3E8              **DEFAULT**      Serial port 3 I/O port address is 3E8

- ➔ **2E8**                      Serial port 3 I/O port address is 2E8
- ➔ **2E0**                      Serial port 3 I/O port address is 2E0
- ➔ **2D8**                      Serial port 3 I/O port address is 2D8
- ➔ **2D0**                      Serial port 3 I/O port address is 2D0

#### ➔ **Serial Port3 IRQ [11]**

Use the **Serial Port3 IRQ** option to select the interrupt address for serial port 3.

- ➔ **4**                          Serial port 3 IRQ address is 4
- ➔ **5**                          Serial port 3 IRQ address is 5
- ➔ **6**                          Serial port 3 IRQ address is 6
- ➔ **7**                          Serial port 3 IRQ address is 7
- ➔ **9**                          Serial port 3 IRQ address is 9
- ➔ **10**                        Serial port 3 IRQ address is 10
- ➔ **11**                        **DEFAULT**      Serial port 3 IRQ address is 11
- ➔ **12**                        Serial port 3 IRQ address is 12

#### ➔ **Serial Port4 Address [2E8]**

Use the **Serial Port4 IRQ** option to select the interrupt address for serial port 4.

- ➔ **Disabled**                  No base address is assigned to serial port 4
- ➔ **3E8**                      Serial port 4 I/O port address is 3E8
- ➔ **2E0**                      Serial port 4 I/O port address is 2E0

#### ➔ **Serial Port4 IRQ [10]**

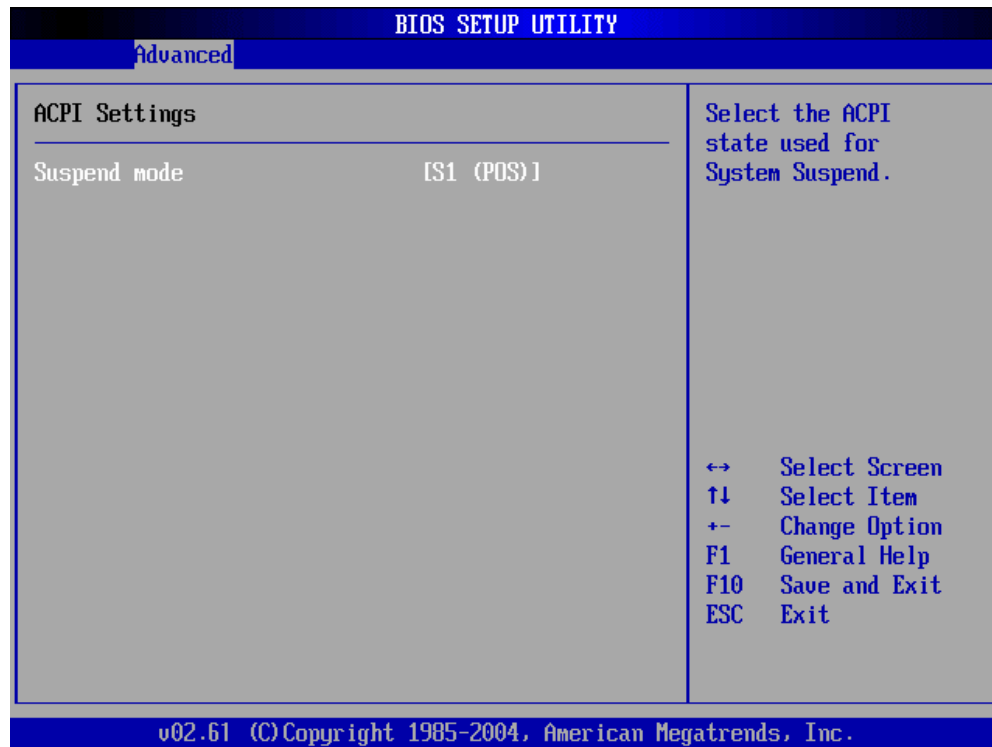
Use the **Serial Port4 IRQ** option to select the interrupt address for serial port 4.

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➔ 3      **DEFAULT**      Serial port 4 IRQ address is 3

### 5.3.4 ACPI Configuration

The **ACPI Configuration** menu (**BIOS Menu 7**) configures the Advanced Configuration and Power Interface (ACPI) and Power Management (APM) options.



**BIOS Menu 7: ACPI Configuration**

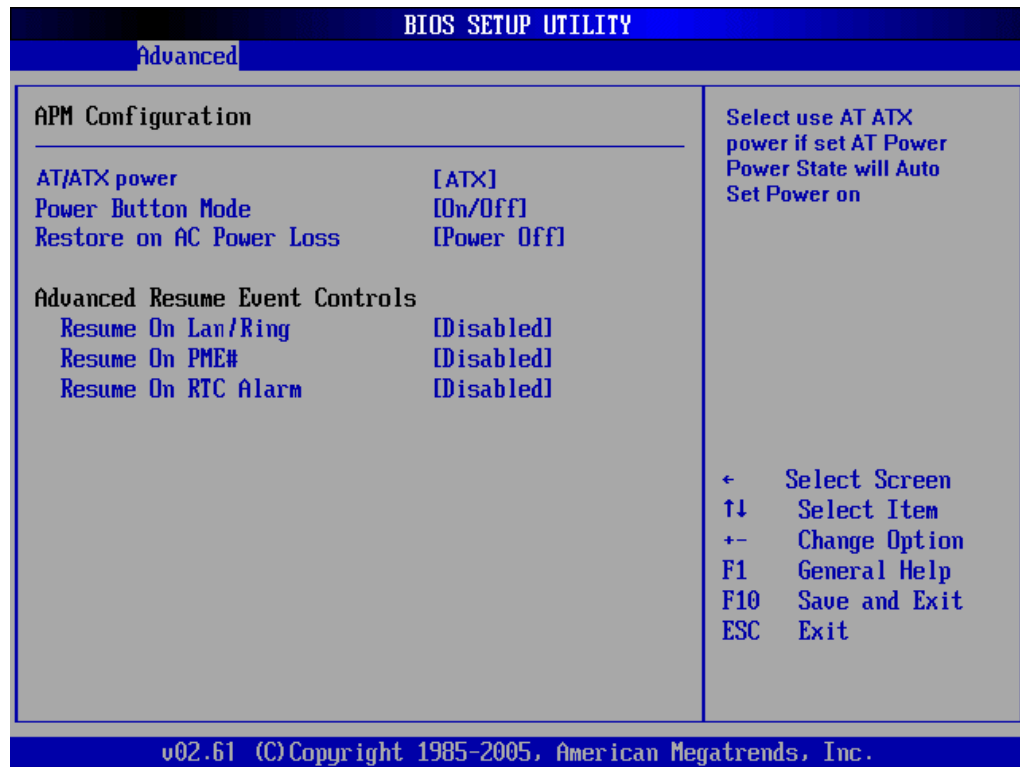
#### ➔ **Suspend Mode [S1(POS)]**

Use the **Suspend Mode** option to specify the sleep state the system enters when it is not being used.

➔ **S1 (POS)      DEFAULT**      The system enters S1(POS) sleep state. The system appears off. The CPU is stopped; RAM is refreshed; the system is running in a low power mode.

### 5.3.5 APM Configuration

The **APM Configuration** menu (**BIOS Menu 8**) allows the advanced power management options to be configured.



**BIOS Menu 8:Advanced Power Management Configuration**

#### ➔ **AT/ATX Power [ATX]**

Use the **AT/ATX Power** option to select the power supply that is connected to the system.

- ➔ **AT**                                      An AT power supply is connected to the system
- ➔ **ATX**                                      **DEFAULT**      An ATX power supply is connected to the system

#### ➔ **Power Button Mode [On/Off]**

Use the **Power Button Mode** BIOS to specify how the power button functions.

- ➔ **On/Off**                                      **DEFAULT**      When the power button is pressed the system is either



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turned on or off

### → Suspend

When the power button is pressed the system goes into suspend mode

### → Restore on AC Power Loss [Power Off]

Use the **Restore on AC Power Loss** BIOS option to specify what state the system returns to if there is a sudden loss of power to the system.

#### → Power Off

DEFAULT

The system remains turned off

#### → Power On

The system turns on

#### → Last State

The system returns to its previous state. If it was on, it turns itself on. If it was off, it remains off.

### → Resume on Lan/Ring [Disabled]

Use the **Resume on Lan/Ring** BIOS option to enable activity on the RI (ring in) modem line to rouse the system from a suspend or standby state. That is, the system will be roused by an incoming call on a modem.

#### → Disabled

DEFAULT

Wake event not generated by an incoming call

#### → Enabled

Wake event generated by an incoming call

### → Resume on PME# [Disabled]

Use the **Resume on PME#** BIOS option to enable activity on the PCI PME (power management event) controller to rouse the system from a suspend or standby state.

#### → Disabled

DEFAULT

Wake event not generated by PCI PME controller activity

#### → Enabled

Wake event generated by PCI PME controller activity

### ➔ Resume On RTC Alarm [Disabled]

Use the **Resume On RTC Alarm** option to specify the time the system should be roused from a suspended state.

- ➔ **Disabled**      **DEFAULT**      The real time clock (RTC) cannot generate a wake event
- ➔ **Enabled**      If selected, the following appears with values that can be selected:

#### ➔ **RTC Alarm Date (Days)**

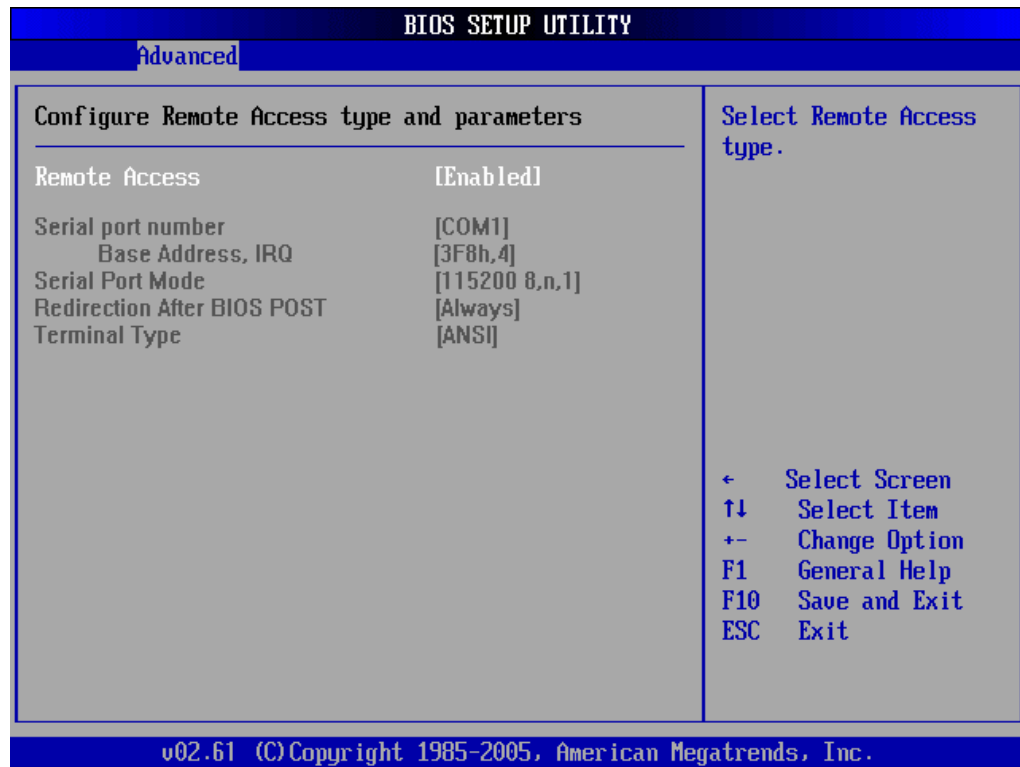
#### ➔ **System Time**

After setting the alarm, the computer turns itself on from a suspend state when the alarm goes off.

## 5.3.6 Remote Access Configuration

Use the **Remote Access Configuration** menu (**BIOS Menu 9**) to configure remote access parameters. The **Remote Access Configuration** is an AMIBIOS feature and allows a remote host running a terminal program to display and configure the BIOS settings.

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**BIOS Menu 9: Remote Access Configuration [Advanced]**

### ➔ Remote Access [Enabled]

Use the **Remote Access** option to enable or disable access to the remote functionalities of the system.

- ➔ **Disabled** Remote access is disabled.
- ➔ **Enabled** **DEFAULT** Remote access configuration options shown below appear:

- ➔ **Serial Port Number**
- ➔ **Serial Port Mode**
- ➔ **Flow Control**
- ➔ **Redirection after BIOS POST**

→ **Terminal Type**→ **VT-UTF8 Combo Key Support**

These configuration options are discussed below.

→ **Serial Port Number [COM1]**

Use the **Serial Port Number** option allows to select the serial port used for remote access.

→ **COM1**     **DEFAULT**     System is remotely accessed through COM1

→ **COM2**     System is remotely accessed through COM2

**NOTE:** Make sure the selected COM port is enabled through the Super I/O configuration menu.

→ **Base Address, IRQ [3F8h,4]**

The **Base Address, IRQ** option cannot be configured and only shows the interrupt address of the serial port listed above.

→ **Serial Port Mode [115200 8,n,1]**

Use the **Serial Port Mode** option to select baud rate through which the console redirection is made. The following configuration options are available

- 115200 8,n,1 **DEFAULT**
- 57600 8,n,1
- 38400 8,n,1
- 19200 8,n,1
- 09600 8,n,1



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**NOTE:**

Identical baud rate setting must be set on the host (a management computer running a terminal software) and the slave

### → Redirection After BIOS POST [Always]

Use the **Redirection After BIOS POST** option to specify when console redirection should occur.

- |   |                    |                |                                                                        |
|---|--------------------|----------------|------------------------------------------------------------------------|
| → | <b>Disabled</b>    |                | The console is not redirected after POST                               |
| → | <b>Boot Loader</b> |                | Redirection is active during POST and during Boot Loader               |
| → | <b>Always</b>      | <b>DEFAULT</b> | Redirection is always active (Some Oses may not work if set to Always) |

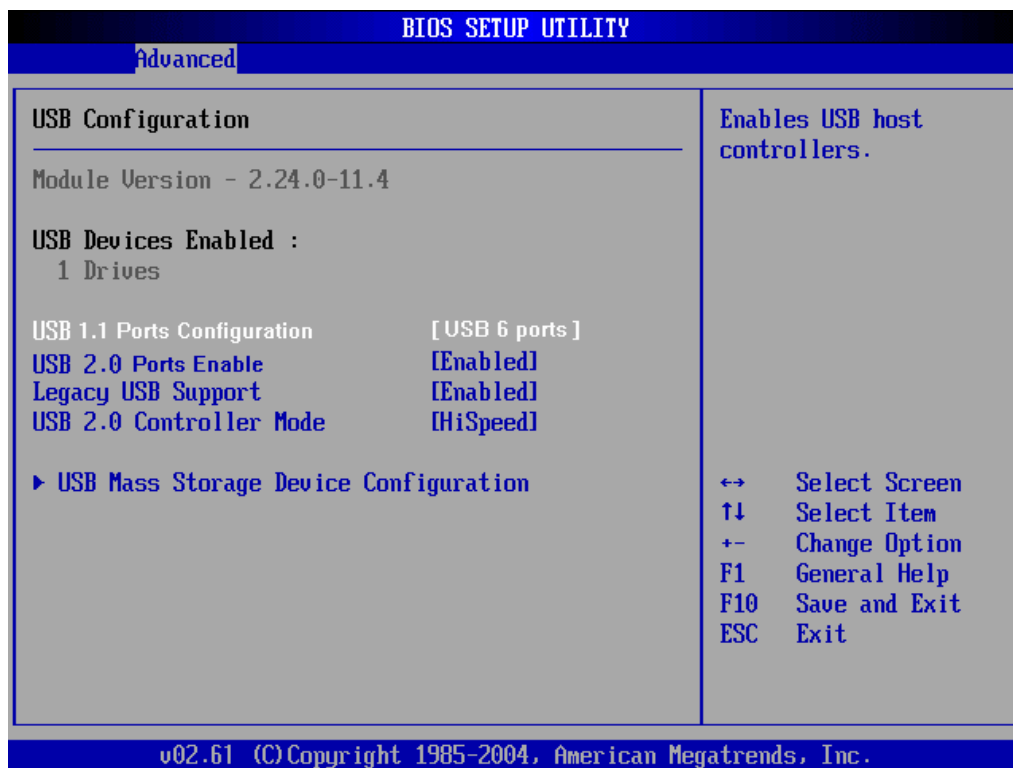
### → Terminal Type [ANSI]

Use the **Terminal Type** BIOS option to specify the remote terminal type.

- |   |                |                |                                     |
|---|----------------|----------------|-------------------------------------|
| → | <b>ANSI</b>    | <b>DEFAULT</b> | The target terminal type is ANSI    |
| → | <b>VT100</b>   |                | The target terminal type is VT100   |
| → | <b>VT-UTF8</b> |                | The target terminal type is VT-UTF8 |

## 5.3.7 USB Configuration

Use the **USB Configuration** menu (**BIOS Menu 10**) to read USB configuration information and configure the USB settings.



**BIOS Menu 10: USB Configuration**

➔ **USB Devices Enabled**

The **USB Devices Enabled** field lists the USB devices that are enabled on the system

➔ **USB 1.1 Ports Configuration [USB 6 Ports]**

Use the **USB Ports Configuration** BIOS option to specify how many of the USB ports are USB 1.1 compatible.

- |   |                                   |                                          |
|---|-----------------------------------|------------------------------------------|
| ➔ | <b>Disabled</b>                   | None of the ports are USB 1.1 compatible |
| ➔ | <b>USB 2 Ports</b>                | Two ports are USB 1.1 compatible         |
| ➔ | <b>USB 4 ports</b>                | Four ports are USB 1.1 compatible        |
| ➔ | <b>USB 6 ports</b> <b>DEFAULT</b> | Six ports are USB 1.1 compatible         |

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### → USB 2.0 Ports Enable [Enabled]

Use the **USB 2.0 Ports Enable** BIOS option to enable or disable the USB 2.0 ports

- **Disabled** USB 2.0 ports disabled
- **Enabled** **DEFAULT** USB 2.0 ports enabled

### → Legacy USB Support [Enabled]

Use the **Legacy USB Support** BIOS option to enable USB mouse and USB keyboard support.

Normally if this option is not enabled, any attached USB mouse or USB keyboard does not become available until a USB compatible operating system is fully booted with all USB drivers loaded. When this option is enabled, any attached USB mouse or USB keyboard can control the system even when there is no USB driver loaded onto the system.

- **Disabled** Legacy USB support disabled
- **Enabled** **DEFAULT** Legacy USB support enabled
- **Auto** Legacy USB support disabled if no USB devices are connected

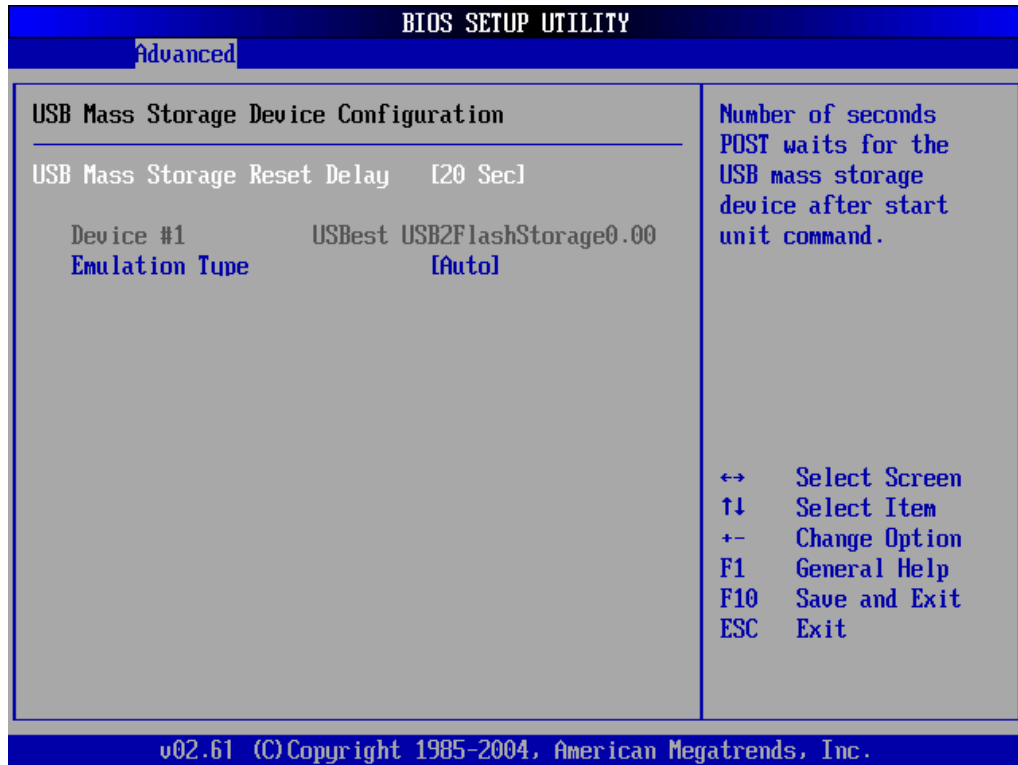
### → USB2.0 Controller Mode [HiSpeed]

Use the **USB2.0 Controller Mode** option to set the speed of the USB2.0 controller.

- **FullSpeed** The controller is capable of operating at 12Mb/s
- **HiSpeed** **DEFAULT** The controller is capable of operating at 480Mb/s

## 5.3.7.1 USB Mass Storage Device Configuration

Use the **USB Mass Storage Device Configuration** menu (**BIOS Menu 11**) to configure USB mass storage class devices.



**BIOS Menu 11: USB Mass Storage Device Configuration**

➔ **USB Mass Storage Reset Delay [20 Sec]**

Use the **USB Mass Storage Reset Delay** option to set the number of seconds POST waits for the USB mass storage device after the start unit command.

- ➔ **10 Sec** POST waits 10 seconds for the USB mass storage device after the start unit command.
- ➔ **20 Sec** **DEFAULT** POST waits 20 seconds for the USB mass storage device after the start unit command.
- ➔ **30 Sec** POST waits 30 seconds for the USB mass storage device after the start unit command.
- ➔ **40 Sec** POST waits 40 seconds for the USB mass storage device after the start unit command.



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### → Device ##

The **Device##** field lists the USB devices that are connected to the system.

### → Emulation Type [Auto]

Use the **Emulation Type** BIOS option to specify the type of emulation BIOS has to provide for the USB device.



#### NOTE:

Please note that the device's formatted type and the emulation type provided by the BIOS must match for a device to boot properly. If both types do not match then device's behavior is undefined. To make sure both types match, format the device using BIOS INT13h calls after selecting the proper emulation option in BIOS setup. The FORMAT utility provided by Microsoft® MS-DOS®, Microsoft® Windows® 95, and Microsoft® Windows® 98 can be used for this purpose.

- |   |                   |                |                                                                                                                                                               |
|---|-------------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| → | <b>Auto</b>       | <b>DEFAULT</b> | BIOS auto-detects the current USB.                                                                                                                            |
| → | <b>Floppy</b>     |                | The USB device will be emulated as a floppy drive.<br>The device can be either A: or B: responding to INT13h calls that return DL = 0 or DL = 1 respectively. |
| → | <b>Forced FDD</b> |                | Allows a hard disk image to be connected as a floppy image. This option works only for drives formatted with FAT12, FAT16 or FAT32.                           |
| → | <b>Hard Disk</b>  |                | Allows the USB device to be emulated as hard disk responding to INT13h calls that return DL values of                                                         |

80h or above.

➔ **CDROM**

Assumes the CD-ROM is formatted as bootable media. All the devices that support block sizes greater than 512 bytes can only be booted using this option.

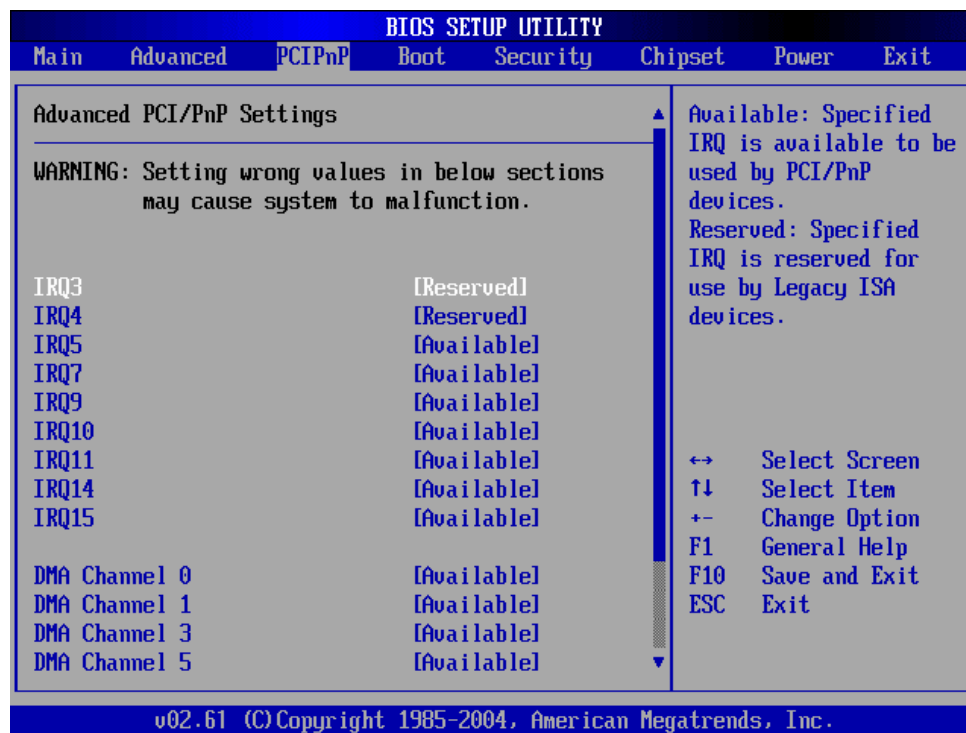
## 5.4 PCI/PnP

Use the **PCI/PnP** menu (**BIOS Menu 10**) to configure advanced PCI and PnP settings.

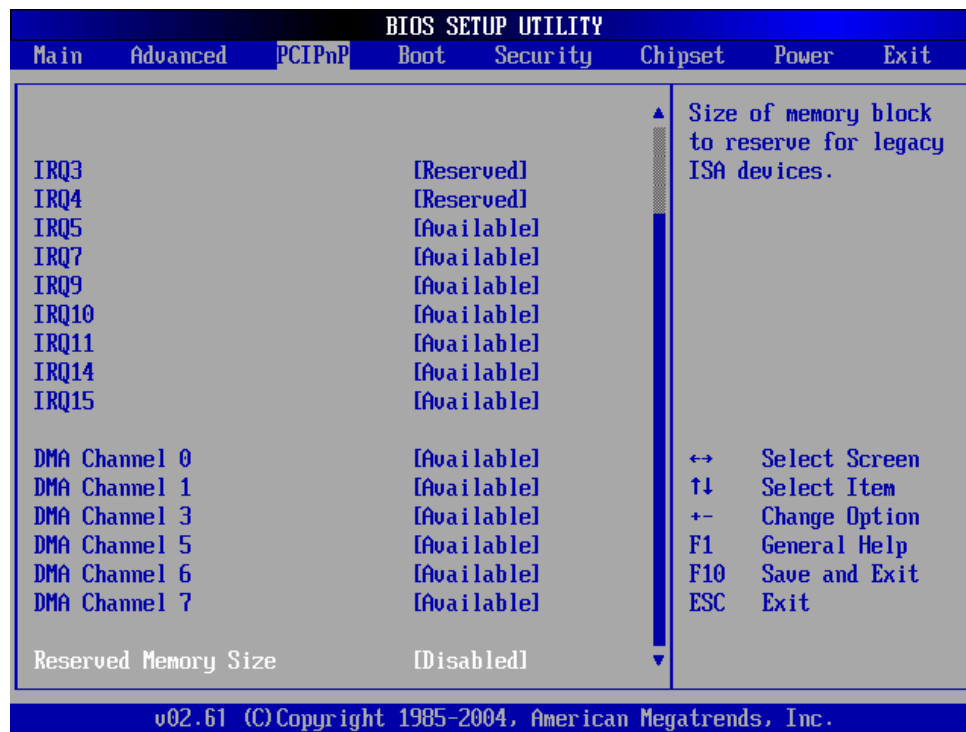


### **WARNING!**

Setting wrong values for the BIOS selections in the PCIPnP BIOS menu may cause the system to malfunction.



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### BIOS Menu 12: PCI/PnP Configuration

#### → IRQ# [Available]

Use the **IRQ#** address to specify what IRQs can be assigned to a particular peripheral device.

- **Available**                      The specified IRQ is available to be used by PCI/PnP devices
- **Reserved**                      The specified IRQ is reserved for use by Legacy ISA devices

Available IRQ addresses are:

- IRQ3
- IRQ4
- IRQ5
- IRQ7

- IRQ9
- IRQ10
- IRQ 11
- IRQ 14
- IRQ 15

➔ **DMA Channel# [Available]**

Use the **DMA Channel#** option to assign a specific DMA channel to a particular PCI/PnP device.

- |   |                  |                |                                                              |
|---|------------------|----------------|--------------------------------------------------------------|
| ➔ | <b>Available</b> | <b>DEFAULT</b> | The specified DMA is available to be used by PCI/PnP devices |
| ➔ | <b>Reserved</b>  |                | The specified DMA is reserved for use by Legacy ISA devices  |

Available DMA Channels are:

- DM Channel 0
- DM Channel 1
- DM Channel 3
- DM Channel 5
- DM Channel 6
- DM Channel 7

➔ **Reserved Memory Size [Disabled]**

Use the **Reserved Memory Size** BIOS option to specify the amount of memory that should be reserved for legacy ISA devices.

- |   |                 |                |                                                 |
|---|-----------------|----------------|-------------------------------------------------|
| ➔ | <b>Disabled</b> | <b>DEFAULT</b> | No memory block reserved for legacy ISA devices |
| ➔ | <b>16K</b>      |                | 16KB reserved for legacy ISA devices            |
| ➔ | <b>32K</b>      |                | 32KB reserved for legacy ISA devices            |



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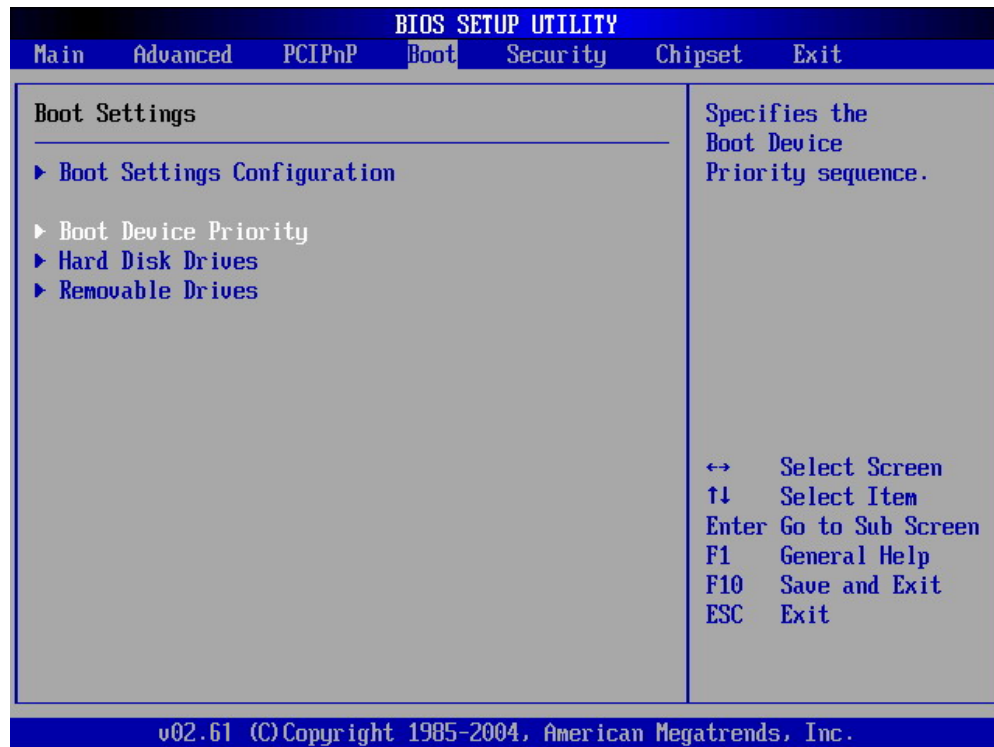


64K

54KB reserved for legacy ISA devices

## 5.5 Boot

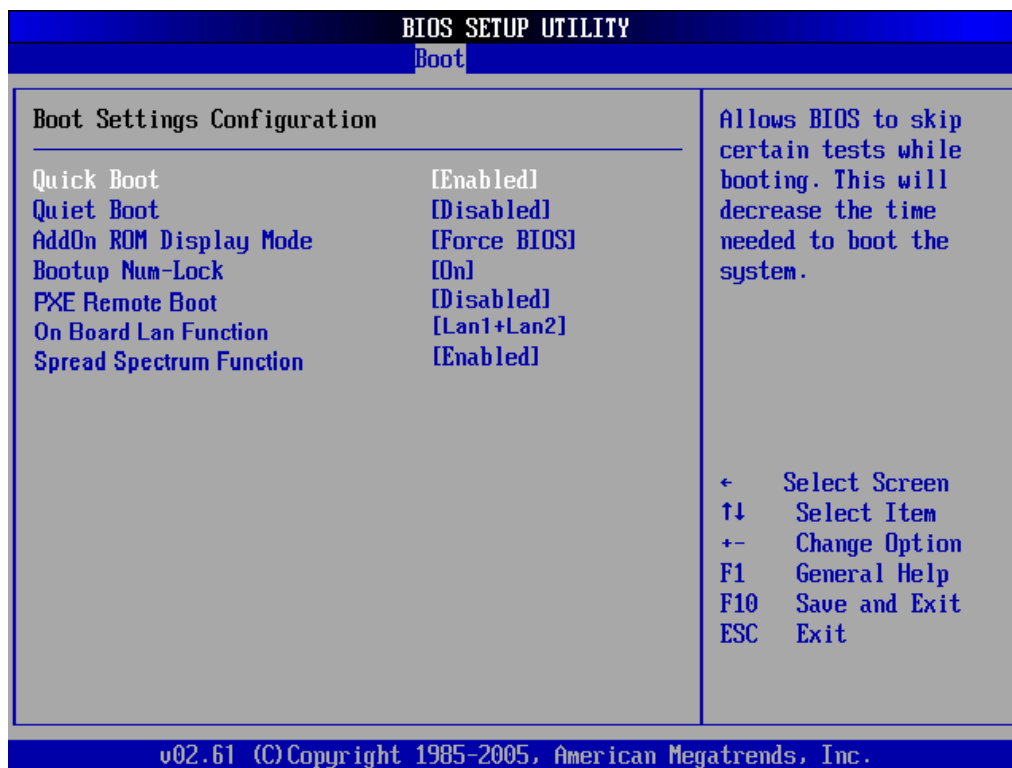
Use the **Boot** menu (**BIOS Menu 13**) to configure system boot options.



**BIOS Menu 13: Boot**

### 5.5.1 Boot Settings Configuration

Use the **Boot Settings Configuration** menu (**BIOS Menu 13**) to configure advanced system boot options.



**BIOS Menu 14: Boot Settings Configuration**

➔ **Quick Boot [Enabled]**

Use the **Quick Boot** BIOS option to make the computer speed up the boot process.

- ➔ **Disabled**                      No POST procedures are skipped
- ➔ **Enabled      DEFAULT**      Some POST procedures are skipped to decrease the system boot time

➔ **Quiet Boot [Disabled]**

Use the **Quiet Boot** BIOS option to select the screen display when the system boots.

- ➔ **Disabled      DEFAULT**      Normal POST messages displayed
- ➔ **Enabled**                      OEM Logo displayed instead of POST messages

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### → AddOn ROM Display Mode [Force BIOS]

Use the **AddOn ROM Display Mode** option to allow add-on ROM (read-only memory) messages to be displayed.

- **Force BIOS**      **DEFAULT**      The system forces third party BIOS to display during system boot.
- **Keep Current**      The system displays normal information during system boot.

### → Bootup Num-Lock [On]

Use the **Bootup Num-Lock** BIOS option to specify if the number lock setting must be modified during boot up.

- **Off**      Does not enable the keyboard Number Lock automatically. To use the 10-keys on the keyboard, press the Number Lock key located on the upper left-hand corner of the 10-key pad. The Number Lock LED on the keyboard lights up when the Number Lock is engaged.
- **On**      **DEFAULT**      Allows the Number Lock on the keyboard to be enabled automatically when the computer system boots up. This allows the immediate use of the 10-key numeric keypad located on the right side of the keyboard. To confirm this, the Number Lock LED light on the keyboard is lit.

### → PXE Remote Boot [Disabled]

The **PXE Remote Boot** option enables or disables the on-board LAN ROM function.

- **Disabled**      **DEFAULT**      The ROM function is disabled.
- **Enabled**      The ROM function is enabled.

### ➔ On Board Lan Function [Lan1+Lan2]

Use the **On Board Lan Function** option to enable or disable the on-board LAN1 or LAN2 controller.

- ➔ **All Disabled**                      The LAN1 and LAN2 controllers are disabled.
- ➔ **Lan1 Only**                        Only the LAN1 controller is enabled.
- ➔ **Lan2 Only**                        Only the LAN2 controller is enabled.
- ➔ **Lan1+Lan2**      **DEFAULT**      The LAN1 and LAN2 controllers are enabled.

### ➔ Spread Spectrum Function [Enabled]

The **Spread Spectrum Function** option can help to improve CPU EMI issues.

- ➔ **Disabled**                              The spread spectrum function is disabled
- ➔ **Enabled**              **DEFAULT**      The spread spectrum function is enabled

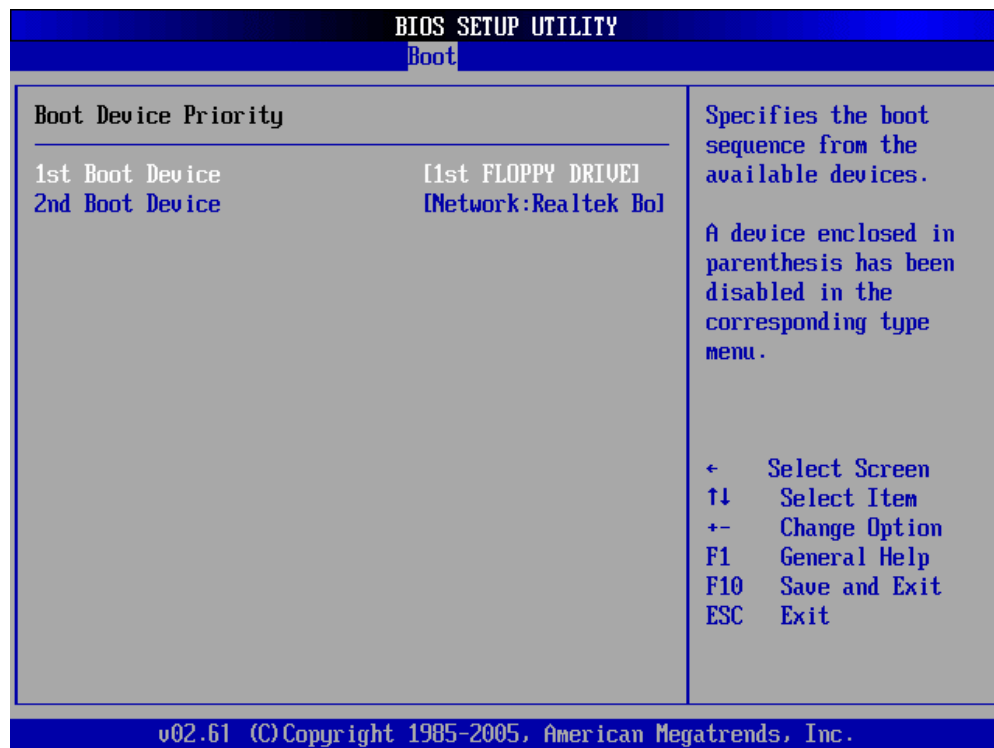
## 5.5.2 Boot Device Priority

Use the **Boot Device Priority** menu (**BIOS Menu 15**) to specify the boot sequence from the available devices. Possible boot devices may include:

- HDD
- CD/DVD



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BIOS Menu 15: Boot Device Priority Settings

### 5.5.3 Hard Disk Drives

Use the **Hard Disk Drives** menu to specify the boot sequence of the available HDDs. When the menu is opened, the HDDs connected to the system are listed as shown below:

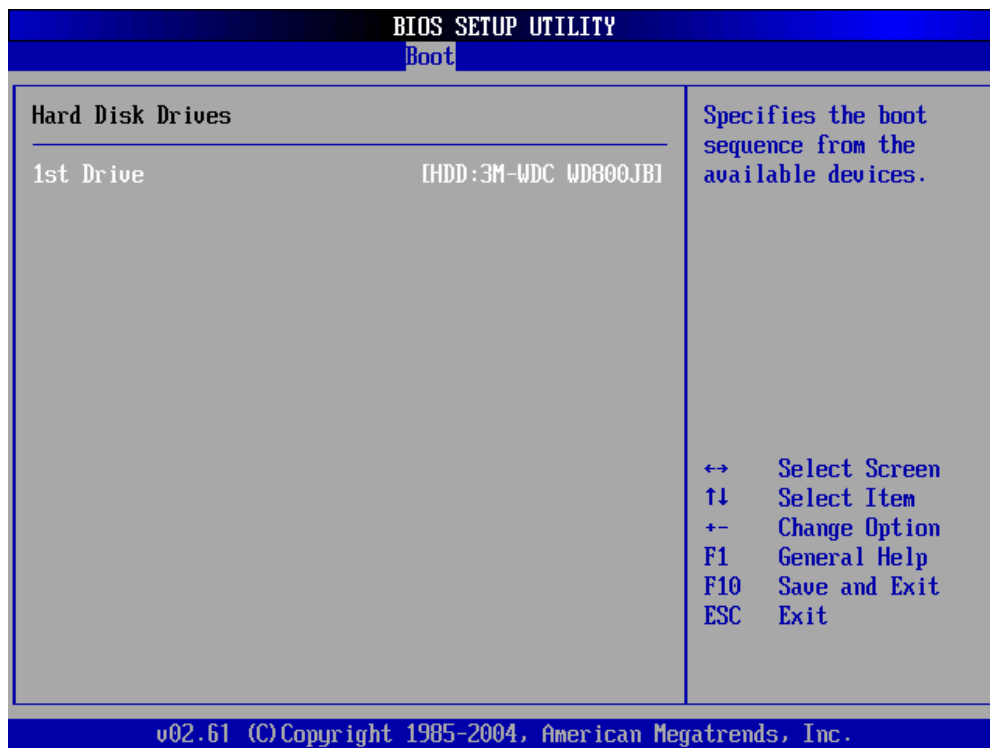
■ 1st Drive [HDD: PM-(part number)]



#### NOTE:

Only the drives connected to the system are shown. For example, if only two HDDs are connected only “**1st Drive**” and “**2nd Drive**” are listed.

The boot sequence from the available devices is selected. If the “**1st Drive**” option is selected a list of available HDDs is shown. Select the first HDD the system boots from. If the “**1st Drive**” is not used for booting this option may be disabled.



**BIOS Menu 16: Hard Disk Drives**

### 5.5.4 Removable Drives

Use the **Removable Drives** menu (**BIOS Menu 17**) to specify the boot sequence of the available FDDs. When the menu is opened, the FDDs connected to the system are listed as shown below:

- 1st Drive [1st FLOPPY DRIVE]
- 2nd Drive [2nd FLOPPY DRIVE]

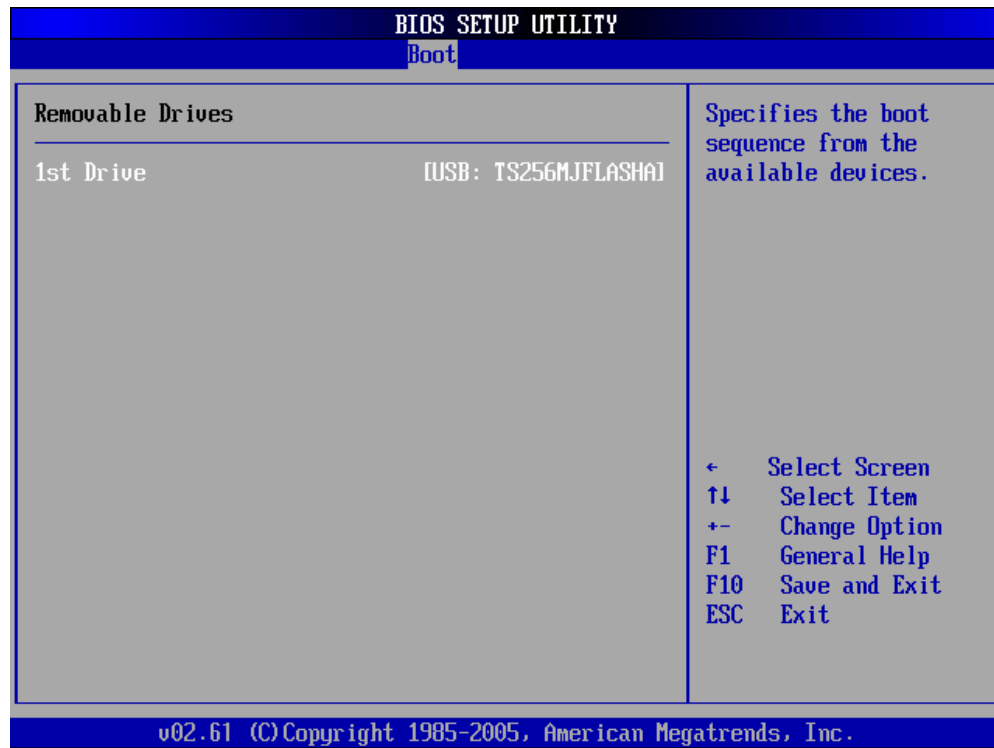


#### **NOTE:**

Only the drives connected to the system are shown. For example, if only one FDD is connected only "1st Drive" is listed.

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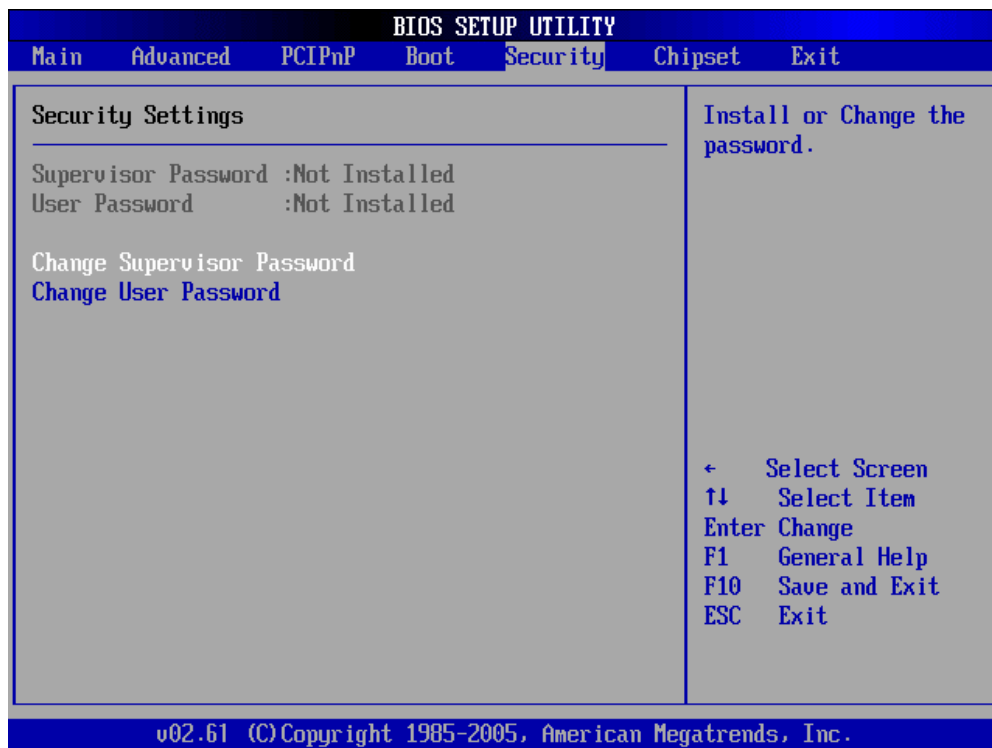
The boot sequence from the available devices is selected. If the “**1st Drive**” option is selected a list of available FDDs is shown. Select the first FDD the system boots from. If the “**1st Drive**” is not used for booting this option may be disabled.



BIOS Menu 17: Removable Drives

## 5.6 Security

Use the **Security** menu (**BIOS Menu 18**) to set system and user passwords.



**BIOS Menu 18: Security**

➔ **Change Supervisor Password**

Use the **Change Supervisor Password** to set or change a supervisor password. The default for this option is **Not Installed**. If a supervisor password must be installed, select this field and enter the password. After the password has been added, **Install** appears next to **Change Supervisor Password**.

➔ **Change User Password**

Use the **Change User Password** to set or change a user password. The default for this option is **Not Installed**. If a user password must be installed, select this field and enter the password. After the password has been added, **Install** appears next to **Change User Password**.

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## 5.7 Chipset

Use the **Chipset** menu (**BIOS Menu 19**) to access the NorthBridge and SouthBridge configuration menus

**WARNING!**

Setting the wrong values for the Chipset BIOS selections in the Chipset BIOS menu may cause the system to malfunction.



**BIOS Menu 19: Chipset**

➔ **VGA Frame Buffer Size [64MB]**

Use the **VGA Frame Buffer Size** option to set the size of the VGA buffer. The following options are available.

- 8MB



- 16MB
- 32MB
- 64MB                      **DEFAULT**
- 128MB

#### ➔ **Display Device Select [CRT+LCD]**

Use the **Display Device Select** BIOS feature to determine what displays are used. Dual display functionality is enabled here. Dual display configuration options are listed below:

- CRT
- LCD
- CRT + LCD                      **DEFAULT**

#### ➔ **Panel Type [04]**

Use the **Panel Type** to select the LCD panel resolution. Configuration options are listed below:

- 0 – 640 x 480 x 18
- 1 – 800 x 600 x 18
- 2 – 1024 x 768 x 18
- 4 – 1280 x 1024 x 18                      **DEFAULT**
- 8 – 800 x 480 x 18
- 13 – 1280 x 1024 x 18

#### ➔ **Serial ATA IDE Controller**

The **Serial ATA IDE Controller** option sets the onboard SATA controller. If the RAID function is used this option must be set in the **RAID** mode.

- ➔ **IDE**                                      The SATA controller is set as an IDE device
- ➔ **RAID**                                      The SATA controller is set as a RAID device

#### ➔ **High Definition Audio [Auto]**

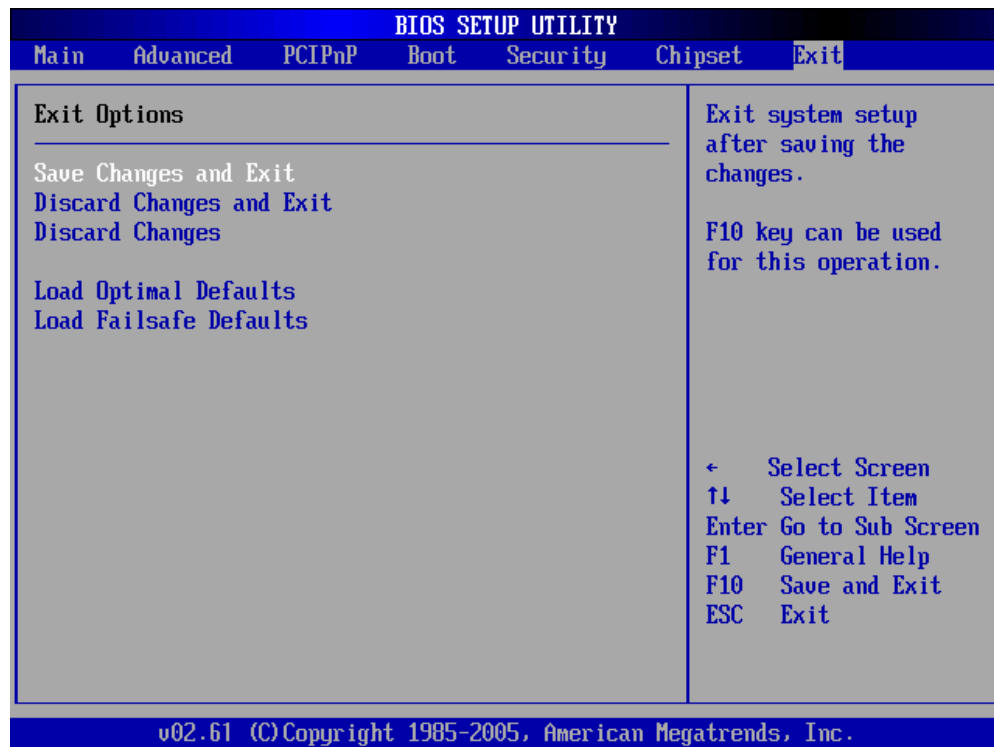
The **High Definition Audio** option enables or disables the audio controller.

## AFOLUX CX Series Flat Panel PC

- ➔ **Disabled**                      The on-board high definition audio controller is disabled.
- ➔ **Auto**                      **DEFAULT**                      The on-board high definition audio controller is automatically detected and enabled.

## 5.8 Exit

Use the **Exit** menu (**BIOS Menu 20**) to load default BIOS values, optimal failsafe values and to save configuration changes.



### BIOS Menu 20:Exit

#### ➔ **Save Changes and Exit**

Use the **Save Changes and Exit** option to save the changes made to the BIOS options and to exit the BIOS configuration setup program.

#### ➔ **Discard Changes and Exit**

Use the **Discard Changes and Exit** option to exit the BIOS configuration setup program without saving the changes made to the system.

➔ **Discard Changes**

Use the **Discard Changes** option to discard the changes and remain in the BIOS configuration setup program.

➔ **Load Optimal Defaults**

Use the **Load Optimal Defaults** option to load the optimal default values for each of the parameters on the Setup menus. **F9 key can be used for this operation.**

➔ **Load Failsafe Defaults**

Use the **Load Failsafe Defaults** option to load failsafe default values for each of the parameters on the Setup menus. **F8 key can be used for this operation.**

## Appendix

## A

# Interface Connectors

---

## A.1 Peripheral Interface Connectors

The AFL-CX series flat panel PC motherboard, the AFLMB-CX700 comes with a number of peripheral interface connectors and configuration jumpers listed in **Chapter 2**. The pinouts for these connectors are listed below:

| PIN NO. | DESCRIPTION | PIN NO. | DESCRIPTION |
|---------|-------------|---------|-------------|
| 1       | OUTL        | 3       | GND         |
| 2       | GND         | 4       | OUTR        |

**Table A-1: Audio-Out Connector Pinouts (CN12)**

| PIN NO. | DESCRIPTION |
|---------|-------------|
| 1       | +3.3V       |
| 2       | GND         |

**Table A-2: Battery Connector Pinouts (BT1)**

| PIN NO. | DESCRIPTION | PIN NO. | DESCRIPTION             |
|---------|-------------|---------|-------------------------|
| 1       | GROUND      | 26      | CARD DETECT1            |
| 2       | D3          | 27      | D11                     |
| 3       | D4          | 28      | D12                     |
| 4       | D5          | 29      | D13                     |
| 5       | D6          | 30      | D14                     |
| 6       | D7          | 31      | D15                     |
| 7       | CS1#        | 32      | CS3#                    |
| 8       | N/C         | 33      | N/C                     |
| 9       | GROUND      | 34      | IOR#                    |
| 10      | N/C         | 35      | IOW#                    |
| 11      | N/C         | 36      | OBLIGATORY TO PULL HIGH |
| 12      | N/C         | 37      | IRQ15                   |
| 13      | VCC         | 38      | VCC                     |
| 14      | N/C         | 39      | MASTER/SLAVE            |
| 15      | N/C         | 40      | N/C                     |
| 16      | N/C         | 41      | RESET#                  |
| 17      | N/C         | 42      | IORDY                   |



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|    |              |    |         |
|----|--------------|----|---------|
| 18 | A2           | 43 | N/C     |
| 19 | A1           | 44 | N/C     |
| 20 | A0           | 45 | ACTIVE# |
| 21 | D0           | 46 | PDIAG#  |
| 22 | D1           | 47 | D8      |
| 23 | D2           | 48 | D9      |
| 24 | N/C          | 49 | D10     |
| 25 | CARD DETECT2 | 50 | GROUND  |

Table A-3: CFII Socket Pinouts (CN10)

| PIN NO. | DESCRIPTION | PIN NO. | DESCRIPTION |
|---------|-------------|---------|-------------|
| 1       | DCD1        | 2       | RX1         |
| 3       | TX1         | 4       | DTR1        |
| 5       | GND         | 6       | DSR1        |
| 7       | RTS1        | 8       | CTS1        |
| 9       | RI 1        | 10      | GND         |

Table A-4: COM1 Connector Pinouts (CN17)

| PIN NO. | DESCRIPTION | PIN NO. | DESCRIPTION |
|---------|-------------|---------|-------------|
| 1       | DCD2        | 2       | RX2         |
| 3       | TX2         | 4       | DTR2        |
| 5       | GND         | 6       | DSR2        |
| 7       | RTS2        | 8       | CTS2        |
| 9       | RI 2        | 10      | GND         |

Table A-5: COM2 Connector Pinouts (CN16)

| PIN NO. | DESCRIPTION | PIN NO. | DESCRIPTION |
|---------|-------------|---------|-------------|
| 1       | DCD4        | 2       | DSR4        |
| 3       | RX4         | 4       | RTS4        |
| 5       | TX4         | 6       | CTS4        |
| 7       | DTR4        | 8       | RI 4        |
| 9       | GND         | 10      | NC          |

Table A-6: COM4 Connector Pinouts (CN4)

| PIN NO. | DESCRIPTION | PIN NO. | DESCRIPTION |
|---------|-------------|---------|-------------|
| 1       | +12V        | 2       | +12V        |
| 3       | RI 1        | 4       | RI 2        |
| 5       | +5V         | 6       | +5V         |
| 7       | RI 1        | 8       | RI 2        |
| 9       | COMRI 1     | 10      | COMRI 2     |

**Table A-7: COM1/2 RI Connector Pinouts (JP6)**

| PIN NO. | DESCRIPTION | PIN NO. | DESCRIPTION |
|---------|-------------|---------|-------------|
| 1       | +12V        | 2       | COMRI 4     |
| 3       | COMRI 4     | 4       | RI 4        |
| 5       | +5V         | 6       | COMRI 4     |

**Table A-8: COM4 RI Connector Pinouts (JP3)**

| PIN NO. | DESCRIPTION |
|---------|-------------|
| 1       | +3.3V       |
| 2       | TDO         |
| 3       | TDI         |
| 4       | TMS         |
| 5       | TCK         |
| 6       | GND         |

**Table A-9: CPLD Connector Pinouts (CN2)**

| PIN NO. | DESCRIPTION |
|---------|-------------|
| 1       | NC          |
| 2       | +5V         |
| 3       | GND         |

**Table A-10: CPU Fan Connector Pinouts (FAN1)**

| PIN NO. | DESCRIPTION | PIN NO. | DESCRIPTION |
|---------|-------------|---------|-------------|
| 1       | RED         | 2       | DDCDAT      |
| 3       | GREEN       | 4       | DDCCLK      |
| 5       | BLUE        | 6       | GND         |

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|   |       |    |     |
|---|-------|----|-----|
| 7 | VSYNC | 8  | GND |
| 9 | HSYNC | 10 | GND |

Table A-11: CRT Connector Pinouts (CN5)

| PIN NO. | DESCRIPTION | PIN NO. | DESCRIPTION |
|---------|-------------|---------|-------------|
| 1       | +5V         | 2       | +12V        |
| 3       | OUT0        | 4       | INT1        |
| 5       | OPT1        | 6       | GND         |

Table A-12: GPIO Connector Pinouts (JP2)

| PIN NO. | DESCRIPTION |
|---------|-------------|
| 1       | +5V         |
| 2       | GND         |
| 3       | GND         |
| 4       | +12V        |

Table A-13: HDD Power Connector Pinouts (CN9)

| PIN NO. | DESCRIPTION | PIN NO. | DESCRIPTION    |
|---------|-------------|---------|----------------|
| 1       | RESET#      | 2       | GROUND         |
| 3       | DATA 7      | 4       | DATA 8         |
| 5       | DATA 6      | 6       | DATA 9         |
| 7       | DATA 5      | 8       | DATA 10        |
| 9       | DATA 4      | 10      | DATA 11        |
| 11      | DATA 3      | 12      | DATA 12        |
| 13      | DATA 2      | 14      | DATA 13        |
| 15      | DATA 1      | 16      | DATA 14        |
| 17      | DATA 0      | 18      | DATA 15        |
| 19      | GROUND      | 20      | N/C            |
| 21      | IDE DRQ     | 22      | GROUND         |
| 23      | IOW#        | 24      | GROUND         |
| 25      | IOR#        | 26      | GROUND         |
| 27      | IDE CHRDY   | 28      | GROUND         |
| 29      | IDE DACK    | 30      | GROUND-DEFAULT |

|    |             |    |          |
|----|-------------|----|----------|
| 31 | INTERRUPT   | 32 | N/C      |
| 33 | SA1         | 34 | N/C      |
| 35 | SA0         | 36 | SA2      |
| 37 | HDC CS0#    | 38 | HDC CS1# |
| 39 | HDD ACTIVE# | 40 | GROUND   |
| 41 | VCC         | 42 | VCC      |
| 43 | GROUND      | 44 | N/C      |

Table A-14: IDE Connector Pinouts (CN11)

| PIN NO. | DESCRIPTION    |
|---------|----------------|
| 1       | VCC5           |
| 2       | MOUSE DATA     |
| 3       | MOUSE CLOCK    |
| 4       | KEYBOARD DATA  |
| 5       | KEYBOARD CLOCK |
| 6       | GND            |

Table A-15: Keyboard/Mouse Connector Pinouts (CN3)

| PIN NO. | DESCRIPTION |
|---------|-------------|
| 1       | +12V        |
| 2       | +12V        |
| 3       | BLON        |
| 4       | ADJ         |
| 5       | GND         |
| 6       | GND         |

Table A-16: LCD Backlight Connector Pinouts (CN1)

| PIN NO. | Description | PIN NO. | Description |
|---------|-------------|---------|-------------|
| 1       | GND         | 2       | GND         |
| 3       | LDC3+       | 4       | LDC3-       |
| 5       | LCLK1+      | 6       | LCLK1-      |
| 7       | LDC2+       | 8       | LDC2-       |
| 9       | LDC1+       | 10      | LDC1-       |

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|    |        |    |        |
|----|--------|----|--------|
| 11 | LDC0+  | 12 | LDC0-  |
| 13 | GND    | 14 | GND    |
| 15 | LDC7+  | 16 | LDC7-  |
| 17 | LCLK2+ | 18 | LCLK2- |
| 19 | LDC6+  | 20 | LDC6-  |
| 21 | LDC5+  | 22 | LDC5-  |
| 23 | LDC4+  | 24 | LDC4-  |
| 25 | GND    | 26 | GND    |
| 27 | VDD    | 28 | VDD    |
| 29 | VDD    | 30 | VDD    |

**Table A-17: LVDS Connector Pinouts (LVDS1)**

| PIN NO. | DESCRIPTION | PIN NO. | DESCRIPTION |
|---------|-------------|---------|-------------|
| 1       | INL         | 3       | GND         |
| 2       | GND         | 4       | INR         |

**Table A-18: MIC-In Connector Pinouts (CN13)**

| PIN NO. | DESCRIPTION |
|---------|-------------|
| 1       | GND         |
| 2       | GND         |
| 3       | 12V         |

**Table A-19: Power Connector Pinouts (CN14)**

| PIN NO. | DESCRIPTION |
|---------|-------------|
| 1       | GND         |
| 2       | TXP         |
| 3       | TXN         |
| 4       | GND         |
| 5       | RXN         |
| 6       | RXP         |
| 7       | GND         |

**Table A-20: SATA Connector Pinouts (SATA1, SATA2)**



| PIN | DESCRIPTION | PIN | DESCRIPTION |
|-----|-------------|-----|-------------|
| 1   | +5V         | 2   | +5V         |
| 3   | +5V         | 4   | HDDLED      |
| 5   | GND         | 6   | PWRBT_SW    |
| 7   | NC          | 8   | GND         |
| 9   | GND         | 10  | RESET_SW    |
| 11  | EXTSMI      | 12  | GND         |

Table A-21: System Panel Connector Pinouts (CN8)

| PIN NO. | DESCRIPTION | PIN NO. | DESCRIPTION |
|---------|-------------|---------|-------------|
| 1       | FUSEVCC1    | 2       | GND         |
| 3       | -USB3       | 4       | +USB2       |
| 5       | +USB3       | 6       | -USB2       |
| 7       | GND         | 8       | FUSEVCC1    |

Table A-22: USB Connector Pinouts (USB1)

| PIN NO. | DESCRIPTION | PIN NO. | DESCRIPTION |
|---------|-------------|---------|-------------|
| 1       | FUSEVCC1    | 2       | GND         |
| 3       | -USB5       | 4       | +USB4       |
| 5       | +USB5       | 6       | -USB4       |
| 7       | GND         | 8       | FUSEVCC1    |

Table A-23: USB Connector Pinouts (USB2)

| PIN NO. | DESCRIPTION | PIN NO. | DESCRIPTION |
|---------|-------------|---------|-------------|
| 1       | FUSEVCC     | 5       | FUSEVCC     |
| 2       | -FUSB0      | 6       | -FUSB1      |
| 3       | +FUSB0      | 7       | +FUSB1      |
| 4       | GND         | 8       | GND         |

Table A-24: USB Connector Pinouts (USB3)

Appendix

**B**

# BIOS Configuration Options

---

## B.1 BIOS Configuration Options

Below is a list of BIOS configuration options described in **Chapter 5**.

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Appendix

C

# Software Drivers

---

## **C.1 Remote Management Tool**

IEI provides optional pre-installed Windows XP Embedded or Windows CE 5.0 turnkey solutions tailored for the AFOLUX series. For information about configuring the operating system, adding remote management tools or additional software and drivers, refer to the software user manuals on IEI AFOLUX series Utility CD that came with the AFOLUX series flat panel PC.

## **C.2 Touch Panel Driver**

### **C.2.1 Introduction**

The onboard touch panel controller enables analog resistive touch panels for four-wire, five-wire & eight-wire models. The controller directly communicates with the PC system through the touch panel communications interface. The controller design is superior in sensitivity, accuracy, and friendly operation. The touch panel driver emulates the left mouse button and the right mouse button functions.

The touch panel driver supports the following operating systems:

- Microsoft Windows versions:
  - Microsoft Windows 95
  - Microsoft Windows 98
  - Microsoft Windows ME
  - Microsoft Windows 2000
  - Microsoft Windows NT
  - Microsoft Windows XP
  - Microsoft Windows 3.1
- Microsoft Windows CE
- Linux
- QNX
- DOS.

Driver installation is described below.

## AFOLUX CX Series Flat Panel PC

## C.2.2 Driver Installation

To install the touch panel software driver, please follow the steps below.

**Step 1:** Insert the driver CD that came with the AFOLUX series into the CD drive.

**Step 2:** Once the CD drive is installed, the screen in **Figure C-1** appears.



**Figure C-1: Driver CD Pop Up Screen**

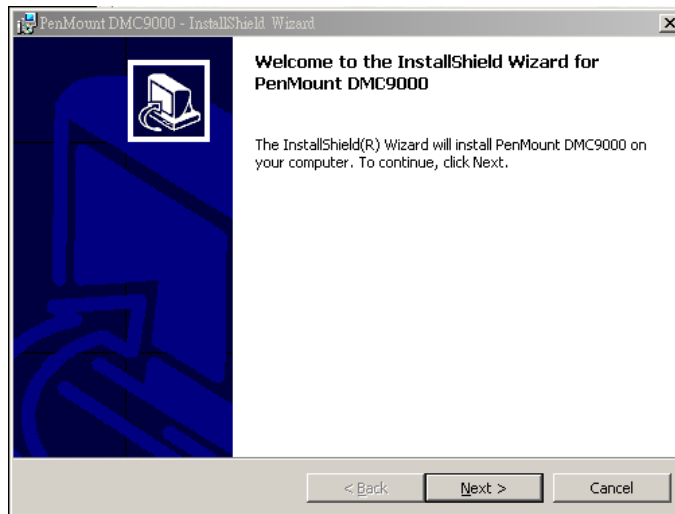
**Step 3:** Select the operating system installed on the system from the menu on the screen.

**NOTE:**

The following description is for driver installation using a Windows 2000 OS. If a different OS is installed, please refer to the driver user manual for the relevant OS. The driver user manuals can be accessed by selecting **“User Manual”** from the menu on the left side of the **“Driver CD Pop Up Screen”**.

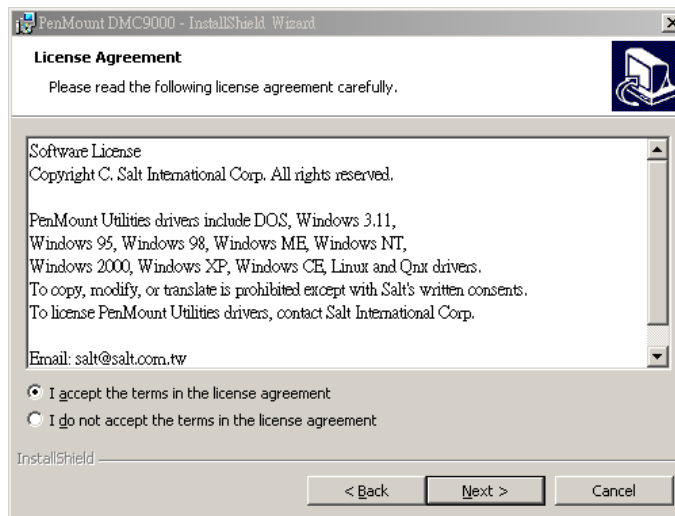


**Step 4:** Once the OS system is selected, a welcome screen appears (**Figure C-2**). To continue the installation process click **NEXT**.



**Figure C-2: Welcome Screen**

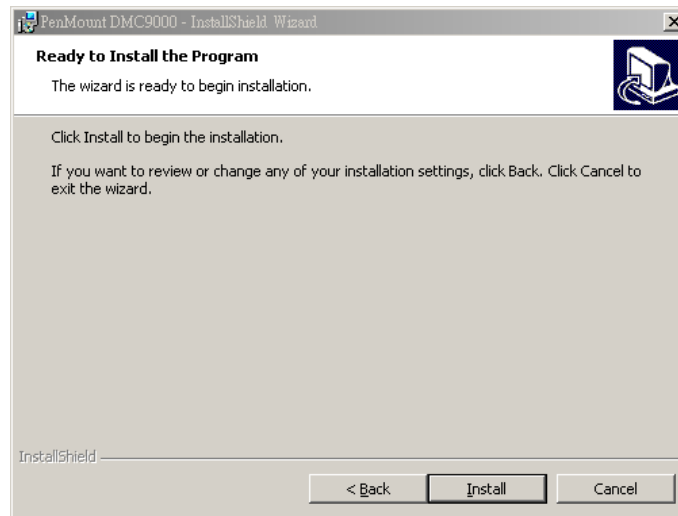
**Step 5:** The license agreement shown in **Figure C-3** appears. Agree to the license by selecting “I accept the terms in the license agreement”.



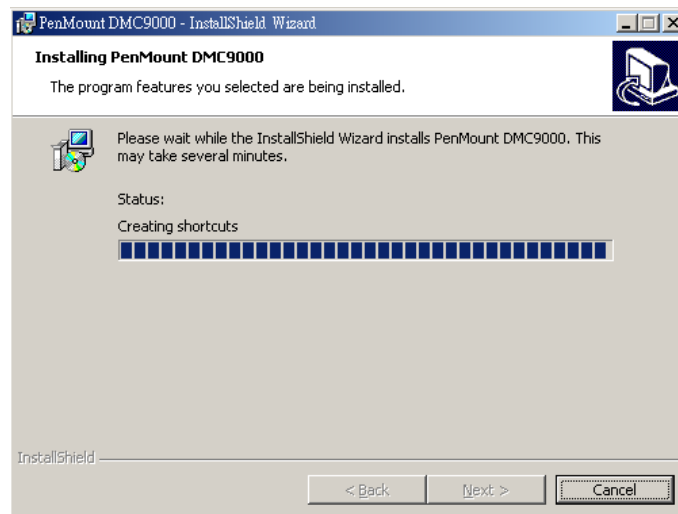
**Figure C-3: License Agreement**

**Step 6:** Click **NEXT** and the Installshield Wizard is ready to install the program (**Figure C-4**).

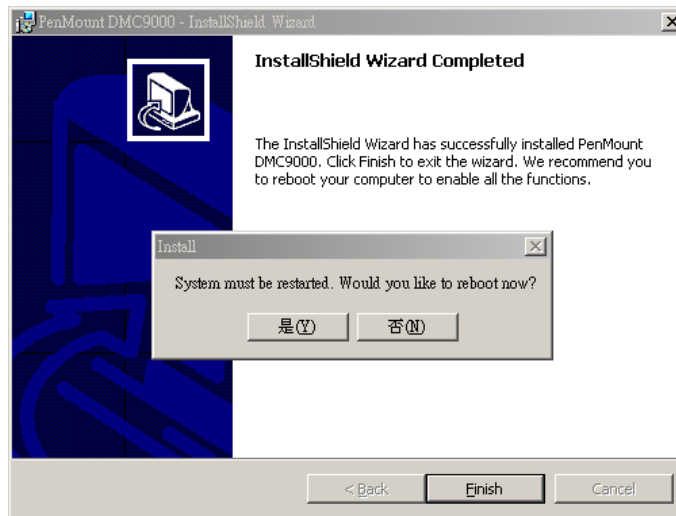
## AFOLUX CX Series Flat Panel PC

**Figure C-4: Ready to Install the Program**

**Step 7:** Click **INSTALL** to continue. The Installing PenMount DMC9000 screen appears as the program is installed (**Figure C-5**).

**Figure C-5: Installing PenMount DMC9000**

**Step 8:** The user is then prompted to select to restart the computer now or later (**Figure C-6**). For the settings to take effect, the computer must be restarted. Click **Yes** to restart the computer.



**Figure C-6: Reboot the Computer**

### **C.2.3 Touch Panel Driver Configuration**

To configure the touch panel driver options, refer to the PenMount user manual located on the driver installation CD.

Appendix

D

# Watchdog Timer

---


**NOTE:**

The following discussion applies to DOS environment. IEI support is contacted or the IEI website visited for specific drivers for more sophisticated operating systems, e.g., Windows and Linux.

The Watchdog Timer is provided to ensure that standalone systems can always recover from catastrophic conditions that cause the CPU to crash. This condition may have occurred by external EMI or a software bug. When the CPU stops working correctly, Watchdog Timer either performs a hardware reset (cold boot) or a Non-Maskable Interrupt (NMI) to bring the system back to a known state.

A BIOS function call (INT 15H) is used to control the Watchdog Timer:

**INT 15H:**

| <b>AH – 6FH Sub-function:</b> |                                                                                                       |
|-------------------------------|-------------------------------------------------------------------------------------------------------|
| AL – 2:                       | Sets the Watchdog Timer's period.                                                                     |
| BL:                           | Time-out value (Its unit-second is dependent on the item "Watchdog Timer unit select" in CMOS setup). |

**Table D-1: AH-6FH Sub-function**

Call sub-function 2 to set the time-out period of Watchdog Timer first. If the time-out value is not zero, the Watchdog Timer starts counting down. While the timer value reaches zero, the system resets. To ensure that this reset condition does not occur, calling sub-function 2 must periodically refresh the Watchdog Timer. However, the Watchdog timer is disabled if the time-out value is set to zero.

A tolerance of at least 10% must be maintained to avoid unknown routines within the operating system (DOS), such as disk I/O that can be very time-consuming.



**NOTE:**

When exiting a program it is necessary to disable the Watchdog Timer, otherwise the system resets.

**Example program:**

**; INITIAL TIMER PERIOD COUNTER**

;

W\_LOOP:

```
MOV    BX, A61H    ;setting the time-out value
MOV    AX, 05       ;time-out value is 5 seconds
INT     15H
```

;

**; ADD THE APPLICATION PROGRAM HERE**

;

```
CMP     EXIT_AP, 1    ;is the application over?
JNE     W_LOOP        ;No, restart the application
```

```
MOV     BX, A61H      ;disable Watchdog Timer
MOV     AX, 0         ;
INT     15H
```

;

**; EXIT ;**

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Appendix

**E**

# Hazardous Materials Disclosure

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## E.1 Hazardous Material Disclosure Table for IPB Products Certified as RoHS Compliant Under 2002/95/EC Without Mercury

The details provided in this appendix are to ensure that the product is compliant with the Peoples Republic of China (China) RoHS standards. The table below acknowledges the presences of small quantities of certain materials in the product, and is applicable to China RoHS only.

A label will be placed on each product to indicate the estimated “Environmentally Friendly Use Period” (EFUP). This is an estimate of the number of years that these substances would “not leak out or undergo abrupt change.” This product may contain replaceable sub-assemblies/components which have a shorter EFUP such as batteries and lamps. These components will be separately marked.

Please refer to the table on the next page.

## AFOLUX CX Series Flat Panel PC

| Part Name                                                                                                                                                                                                                                                                                                                       | Toxic or Hazardous Substances and Elements |              |              |                              |                                |                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|--------------|--------------|------------------------------|--------------------------------|---------------------------------------|
|                                                                                                                                                                                                                                                                                                                                 | Lead (Pb)                                  | Mercury (Hg) | Cadmium (Cd) | Hexavalent Chromium (CR(VI)) | Polybrominated Biphenyls (PBB) | Polybrominated Diphenyl Ethers (PBDE) |
| Housing                                                                                                                                                                                                                                                                                                                         | x                                          | O            | O            | O                            | O                              | x                                     |
| Display                                                                                                                                                                                                                                                                                                                         | X                                          | O            | O            | O                            | O                              | X                                     |
| Printed Circuit Board                                                                                                                                                                                                                                                                                                           | X                                          | O            | O            | O                            | O                              | X                                     |
| Metal Fasteners                                                                                                                                                                                                                                                                                                                 | X                                          | O            | O            | O                            | O                              | O                                     |
| Cable Assembly                                                                                                                                                                                                                                                                                                                  | X                                          | O            | O            | O                            | O                              | X                                     |
| Fan Assembly                                                                                                                                                                                                                                                                                                                    | X                                          | O            | O            | O                            | O                              | X                                     |
| Power Supply Assemblies                                                                                                                                                                                                                                                                                                         | X                                          | O            | O            | O                            | O                              | X                                     |
| Battery                                                                                                                                                                                                                                                                                                                         | O                                          | O            | O            | O                            | O                              | O                                     |
| <p>O: This toxic or hazardous substance is contained in all of the homogeneous materials for the part is below the limit requirement in SJ/T11363-2006</p> <p>X: This toxic or hazardous substance is contained in at least one of the homogeneous materials for this part is above the limit requirement in SJ/T11363-2006</p> |                                            |              |              |                              |                                |                                       |



此附件旨在确保本产品符合中国 RoHS 标准。以下表格标示此产品中某有毒物质的含量符合中国 RoHS 标准规定的限量要求。

本产品上会附有“环境友好使用期限”的标签，此期限是估算这些物质“不会有泄漏或突变”的年限。本产品可能包含有较短的环境友好使用期限的可替换元件，像是电池或灯管，这些元件将会单独标示出来。

| 部件名称                                                                                                                             | 有毒有害物质或元素 |           |           |                 |               |                 |
|----------------------------------------------------------------------------------------------------------------------------------|-----------|-----------|-----------|-----------------|---------------|-----------------|
|                                                                                                                                  | 铅<br>(Pb) | 汞<br>(Hg) | 镉<br>(Cd) | 六价铬<br>(CR(VI)) | 多溴联苯<br>(PBB) | 多溴二苯醚<br>(PBDE) |
| 壳体                                                                                                                               | X         | O         | O         | O               | O             | X               |
| 显示                                                                                                                               | X         | O         | O         | O               | O             | X               |
| 印刷电路板                                                                                                                            | X         | O         | O         | O               | O             | X               |
| 金属螺帽                                                                                                                             | X         | O         | O         | O               | O             | O               |
| 电缆组装                                                                                                                             | X         | O         | O         | O               | O             | X               |
| 风扇组装                                                                                                                             | X         | O         | O         | O               | O             | X               |
| 电力供应组装                                                                                                                           | X         | O         | O         | O               | O             | X               |
| 电池                                                                                                                               | O         | O         | O         | O               | O             | O               |
| <p>O: 表示该有毒有害物质在该部件所有物质材料中的含量均在 SJ/T11363-2006 标准规定的限量要求以下。</p> <p>X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T11363-2006 标准规定的限量要求。</p> |           |           |           |                 |               |                 |

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